

Appendices

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1. Member List of the Study Team

1-1 Outline Design Study

From 3rd August to 30th August, 2014 (28 days)

Position	Name	Period (2014)	Organization
1. Leader	Mr. Koichiro KOROKI	10/Aug.- 20/Aug.	Senior Assistant Director, Contract Management Division 3 Procurement Department, JICA
2. Technical Adviser	Dr. Dai YOSHIZAWA, M.D.	3/Aug.- 20/Aug.	1st Expert Service Div., Bureau of International Medical Cooperation, National Center for Global Health and Medicine
3. Program Coordinator	Ms. Kyoko SAKURAI	10/Aug.- 20/Aug.	Health Division 3, Health Group 2 Human Development Department, JICA
4. Project Manager/ Architectural Planning	Mr. Hozumi OGAWA	3/Aug.- 30/Aug.	Azusa Sekkei Co., Ltd.
5. Architectural Planning/ Environment Survey	Mr. Yosuke OTA	3/Aug.- 16/Aug.	Azusa Sekkei Co., Ltd.
6. Utilities Planning	Mr. Yohsuke YAMADA	10/Aug.- 23/Aug.	Azusa Sekkei Co., Ltd.
7. Equipment Planning	Mr. Ryoji OKAMOTO	10/Aug.- 30/Aug.	INTEM Consulting, Inc.
8. Equipment Procurement/ Cost Estimation	Mr. Yasumichi DOI	3/Aug.- 30/Aug.	INTEM Consulting, Inc.
9. Construction Planning/ Cost Estimation	Mr. Yasuhiro MATSUMOTO	10/Aug.- 30/Aug.	Azusa Sekkei Co., Ltd.
10. Health Planning	Ms. Shiho SASADA, MPH, M.Sc.	3/Aug.- 23/Aug.	S Planning Co., Ltd.

1-2 Explanation of the Draft Report

From 10th to 20th December, 2014 (11 days)

Position	Name	Period (2014)	Organization
1. Leader	Mr. Koichiro KOROKI	13/Dec.- 20/Dec.	Senior Assistant Director, Contract Management Division 3 Procurement Department, JICA
2. Technical Adviser	Dr. Dai YOSHIZAWA, M.D.	10/Dec.- 20/Dec.	1st Expert Service Div., Bureau of International Medical Cooperation, National Center for Global Health and Medicine
3. Program Coordinator	Ms. Kyoko SAKURAI	10/Dec.- 20/Dec.	Health Division 3, Health Group 2 Human Development Department, JICA
4. Project Manager/ Architectural Planning	Mr. Hozumi OGAWA	10/Dec.- 20/Dec.	Azusa Sekkei Co., Ltd.
5. Equipment Planning	Mr. Yasumichi DOI	10/Dec.- 20/Dec.	INTEM Consulting, Inc.

2. Study Schedule

2-1 Outline Design Study

From 3rd August to 30th August, 2014 (28 days)

No.	Date	Time	Activity		
01	3 Aug. (Sun.)	11:00	Lv. NRT by TG-641 (Dr. Yoshizawa)		
		15:30	Ar. at BKK		
		18:15	Lv. BKK by TG-2584		
		19:25	Ar. at PNH		
		11:30	Lv. HND by JL-31 (Mr. Ogawa, Mr. Ota & Mr. Doi)		
		15:40	Ar. at BKK		
		17:10	Lv. BKK by JL-5959		
		18:20	Ar. at PNH		
		11:45	Lv. KIX by TG-673 (Ms. Sasada)		
		15:35	Ar. at BKK		
02	4 Aug. (Mon)	11:15	Courtesy call to JICA and submission and explanation of the Inception Report, Questionnaire and Confirmation of the Schedule (Mr. Takeuchi & Mr. Vesuna)		
		15:00	Courtesy call to MOH and submission and explanation of the Inception Report, Questionnaire and Confirmation of the Schedule (Professor Eng Huot)		
		16:00	Courtesy call to MOH and submission and explanation of the Inception Report, Questionnaire and Confirmation of the Schedule (Dr. Ke Rotha, MD)		
		14:00	Courtesy call to MEDEM2 (Mr. Matsuo)		
		03	5 Aug. (Tue)	08:30	Lv. PNH (Dr. Yoshizawa, Mr. Ogawa, Mr. Doi, & Mr. Ota)
				12:00	Ar. at Svay Rieng
				14:00	Courtesy call to Svay Rien Hospital and submission and explanation of the Inception Report, Questionnaire and Confirmation of the Schedule (Directr Mr. Chan Dara)
				08:00	Visit Department of Planning & Health Information, MOH (Director, Dr... Lo)
				14:00	Visit MEDEM2 (Mr. Matsuo)
				04	6 Aug. (Wed.)
14:30	Meeting with Director of PHD				
15:30	Continue to survey				
08:00	Visit Department of Planning & Health Information, MOH (Director, Dr Lo)				
14:00	Visit MEDEM2 (Mr. Matsuo)				
05	7 Aug. (Thu.)	09:00	Survey Svay Rieng Hospital (Mr. Ogawa & Mr. Ota) & meeting with staff of each department for request equipment (Dr. Yoshizawa & Mr. Doi)		
		13:30	Internal meeting		
		14:30	Continue to survey		
		08:30	Lv. PNH (Ms. Sasada)		
		11:30	Ar. at Svay Rieng		
		14:30	Join to Svay Rien Hospital survey team & courtesy call to Director		
		06	8 Aug. (Fri.)	08:30	Hearing from PHD (Ms. Sasada)
				09:00	Survey Svay Rieng Hospital (Mr. Ogawa & Mr. Ota) & meeting with staff of each department for request equipment (Dr. Yoshizawa & Mr. Doi)
				15:00	Explanation & discussion of several zoning plans at PHD
		07	9 Aug. (Sat.)	09:00	Lv. Svay Rieng (Dr. Yoshizawa, Mr. Ogawa, Mr. Doi, Mr. Ota & Ms Sasada)
09:30	Observation of Chiphou Referral Hospital				
11:00	Ar. at Bavet & observation of border facilities				
14:00	Lv. Svay Rieng (Dr. Yoshizawa, Mr. Ogawa & Mr. Doi)				
17:00	Ar. at PNH				
14:00	Filing documents (Mr. Ota & Ms. Sasada)				
08	10 Aug. (Sun.)	All day	Filing documents (Dr. Yoshizawa, Mr. Ogawa & Mr. Doi)		
		All day	Filing documents (Mr. Ota & Ms. Sasada)		

No.	Date	Time	Activity
		11:00	Lv. HND by TG-641 (Mr. Koroki & Ms. Sakurai)
		15:30	Ar. at BKK
		18:15	Lv. BKK by TG-2584
		19:25	Ar. at PNH
		11:30	Lv. HND by JL-31 (Mr. Yamada, Mr. Okamoto & Mr. Matsumoto)
		15:40	Ar. at BKK
		17:10	Lv. BKK by JL-5959
		18:20	Ar. at PNH
09	11 Aug. (Mon.)	07:45	Internal meeting at JICA (Mr. Koroki, Ms. Sakurai, Dr. Yoshizawa, Mr. Ogawa, Mr. Doi, Mr. Yamada, Mr. Okamoto & Mr. Matsumoto)
		08:45	Courtesy call to JICA anDr.eport (Mr. Koroki, Ms. Sakurai, Dr. Yoshizawa, Mr. Ogawa, & Mr. Doi)
		1430	Courtesy call to MOH and report (Professor Eng Huot)
		15:15	Courtesy call to MEDEM2, Mr. Matsuo
		16:30	Courtesy call to MCH, Dr. Egami
		08:45	Lv. PNH (Mr. Yamada, Mr. Okamoto & Mr. Matsumoto)
		12:00	Ar. at Svay Rieng
		14:00	Internal meeting (Mr. Ota, Ms. Sasada, Mr. Yamada, Mr. Okamoto & Mr. Matsumoto)
		15:00	Observation of Svay Rieng Hospital
		09:00	Filing documents (Mr. Ota & Ms. Sasada)
10	12 Aug. (Tue.)	08:00	Lv. PNH to Svay Rieng (Mr. Koroki, Ms. Sakurai, Dr. Yoshizawa, Mr. Ogawa, Mr. Doi & Mr. Okamoto)
		11:00	After ar. at Svay Rieng, Courtesy call to PHD and explanation of Grant Aid System & project contents
		14:00	Courtesy call to Svay Rieng Hospital and explanation of Grant Aid System & project contents, & Observation of Svay Rieng Hospital
		09:00	Hearing from Svay Rieng Hospital (Ms. Sasada)
		14:00	Hearing from PHD
		09:00	Survey of infrastructure (Mr. Ota, Mr. Matsumoto & Mr. Yamada)
11	13 Aug. (Wed.)	08:00	Lv. Svay Rieng (Mr. Koroki, Ms. Sakurai, Dr. Yoshizawa, Mr. Ogawa, Mr. Doi, Mr. Okamoto & Ms. Sasada)
		09:30	Observation of Romeashek Referral Hospital
		14:45	Internal Meeting (Minutes) (Mr. Koroki, Ms. Sakurai, Dr. Yoshizawa, Mr. Ogawa, Mr. Doi, Mr. Okamoto, Mr. Okasmoto & Mr. Yamada)
		08:30	Survey of infrastructure (Mr. Ota, Mr. Matsumoto & Mr. Yamada)
		15:00	Hearing from PHD (Ms. Sasada)
12	14 Aug. (Thu.)	08:00	Meeting with Director of PHD & Diretor of Svay Rieng Hospital for Minutes of Discussion (Mr. Koroki, Ms. Sakurai, Dr. Yoshizawa, Mr. Ogawa, Mr. Doi, Mr. Okamoto, Mr. Matsumoto & Mr. Ota)
		10:30	Internal meeting
		14:00	Meeting with Director of Svay Rieng Hospital for equipment (Mr. Koroki, Ms. Sakurai, Dr. Yoshizawa, Mr. Ogawa, Mr. Doi, Mr. Okamoto & Mr. Matsumoto)
		08:00	Filing documents (Mr. Yamada & Ms. Sasada)
13	15 Aug. (Fri.)	08:00	Observation of Chiphou Referral Hospita (Mr. Koroki, Ms. Sakurai,Dr. Yoshizawa, Mr. Ogawa, Mr. Doi, Mr. Okamoto, Mr. Matsumoto & Mr. Yamada)
		10:00	Observation of Svay Chrum Health Center
		14:00	Internal Meeting
		08:00	Lv. Svay Rieng (Mr. Okamoto)
		12:00	Ar. at PNH
		14:00	Medical Equipment survey
		08:00	Collecting data at MOH (Ms. Sasada)
		19:10	Lv. PNH by JL-5960 (Mr. Ota)
		20:20	Ar. at BKK
		22:00	Lv. BKK by JL-34

No.	Date	Time	Activity
14	16 Aug. (Sat.)	09:00	Lv. Svay Rieng (Mr. Koroki, Ms. Sakurai, Dr. Yoshizawa, Mr. Ogawa, Mr. Doi & Ms. Sasada)
		12:00	Ar. at PNH
		08:00	Survey of infrastructure (Mr. Matsumoto & Mr. Yamada)
		09:00	Medical Equipment survey (Mr. Okamoto)
		06:10	Ar. at HND (Mr. Ota)
15	17 Aug. (Sun.)	12:00	Meeting with Second hand (NGO) (Mr. Koroki, Ms. Sakurai, Dr. Yoshizawa, Mr. Ogawa, Mr. Doi & Ms. Sasada)
		14:00	Internal meeting
		all day	Filing documents (Mr. Matsumoto & Mr. Yamada)
16	18 Aug. (Mon.)	08:30	M Meeting with MOH about Minutes (Mr. Koroki, Ms. Sakurai, Dr. Yoshizawa, Mr. Ogawa & Mr. Doi)
		09:00	Collecting data at MOH (Ms. Sasada)
		09:00	Medical Equipment survey (Mr. Okamoto)
		09:00	Survey of infrastructure for Svay Rieng Hospital (Mr. Matsumoto & Mr. Yamada)
17	19 Aug. (Tue.)	09:30	Signing on the Minutes of Meeting at MOH (Mr. Koroki, Ms. Sakurai, Dr. Yoshizawa, Mr. Ogawa, Mr. Doi, Mr. Okamoto & Ms Sasada)
		15:00	Report to JICA
		16:00	Report to the Embassy of Japan
		09:00	Survey of infrastructure for Svay Rieng Hospital (Mr. Matsumoto & Mr. Yamada)
		20:25	Lv. PNH by TG-2585 (Mr. Koroki, & Ms. Sakurai)
		21:30	Ar. at BKK
		22:45	Lv. BKK by TG-682
		20:25	Lv. PNH by TG-2585 (Dr. Yoshizawa)
		21:30	Ar. at BKK
23:50	Lv. BKK by TG-642		
18	20 Aug. (Wed.)	09:00	Lv. PNH (Mr. Ogawa & Mr. Doi)
		12:00	Ar. at Svay Rieng
		14:00	Meeting with Svay Rieng Hospital
		09:00	Meeting with Svay Rieng Hospital (Mr. Matsumoto & Mr. Yamada)
		09:00	Data reduction (Ms. Sasada)
		09:00	Medical Equipment survey (Mr. Okamoto)
		06:55	Ar. at HND (Mr. Koroki, & Ms. Sakurai)
		08:10	Ar. at NRT (Dr. Yoshizawa)
19	21 Aug. (Thu.)	09:00	Meeting with Svay Rieng Hospital (Mr. Ogawa, Mr. Doi, Mr. Matsumoto & Mr. Yamada)
		09:00	Data reduction (Ms. Sasada)
		09:00	Medical Equipment survey (Mr. Okamoto)
20	22 Aug. (Fri.)	08:00	Meeting with Svay Rieng Hospital (Mr. Ogawa, Mr. Doi, Mr. Matsumoto & Mr. Yamada)
		09:00	Lv. Svay Rieng (Mr. Matsumoto & Mr. Yamada)
		12:00	Ar. at PNH
		14:00	Data reduction
		09:00	Data reduction (Ms. Sasada)
		09:00	Medical Equipment survey (Mr. Okamoto)
		19:10	Lv. PNH by JL-5960 (Mr. Yamada)
		20:20	Ar. BKK
		22:00	Lv. BKK by JL-34
		20:25	Lv. PNH by TG-2585 (Ms. Sasada)
		21:30	Ar. BKK
23:30	Lv. BKK by TG-622		
21	23 Aug. (Sat.)	08:30	Supplemental survey of Svay Rieng Hospital (Mr. Ogawa & Mr. Doi)
		09:30	Lv. Svay Rieng
		12:00	Ar. at PNH
		09:00	Data reduction (Mr. Matsumoto & Mr. Okamoto)
		14:00	Internal meeting (Mr. Ogawa, Mr. Doi, Mr. Matsumoto & Mr. Okamoto)

No.	Date	Time	Activity
		06:10	Ar. HND (Mr. Yamada)
		07:00	Ar. KIX (Ms. Sasada)
22	24 Aug. (Sun.)	09:00	Internal meeting (Mr. Ogawa, Mr. Doi, Mr. Matsumoto & Mr. Okamoto)
		14:00	Data reduction
23	25 Aug. (Mon.)	09:30	Survey for construction material (Mr. Ogawa,& Mr. Matsumoto)
		14:00	Survey for elevator company
		10:00	Medical Equipment survey (Mr. Doi & Mr. Okamoto)
24	26 Aug. (Tue.)	09:30	Survey for elevator company(Mr. Ogawa,& Mr. Matsumoto)
		10:00	Medical Equipment survey (Mr. Doi & Mr. Okamoto)
		16:30	Visit ITC construction site (Mr. Ogawa, Mr. Matsumoto, Mr. Doi & Mr. Okamoto)
25	27 Aug. (Wed.)	09:30	Survey for construction material (Mr. Ogawa,& Mr. Matsumoto)
		10:00	Medical Equipment survey (Mr. Doi & Mr. Okamoto)
26	28 Aug. (Thu.)	10:00	Explanation of the Technical Note at MOH (Mr. Ogawa, Mr. Matsumoto & Mr. Doi)
		14:00	Hearing about SEZ at CDC
		15:30	Signing on the Technical Note at MOH
		09:00	Medical Equipment survey (Mr. Okamoto)
27	29 Aug. (Fri.)	09:00	Report to the Embassy of Japan
		11:30	Report to JICA
		09:00	Medical Equipment survey (Mr. Okamoto)
		19:10	Lv. PNH by JL-5960 (Mr. Ogawa, Mr. Doi, Mr. Okamoto & Mr. Matsumoto)
		20:20	Ar. BKK
		22:00	Ar. BKK by JL-34
28	30 Aug. (Sat.)	06:10	Ar. HND (Mr. Ogawa, Mr. Doi, Mr. Okamoto & Mr. Matsumoto)

2-2 Explanation of the Draft Report From 10th December to 20th December, 2014 (11days)

No.	Date	Time	Activity
01	10 Dec. (Wed.)	11:45	Lv. NRT by TG-643 (Dr. Yoshizawa & Ms. Sakurai)
		16:45	Ar. at BKK
		00:10	Lv. HND by JL-31 (Mr. Ogawa)
		04:50	Ar. at BKK
		11:00	Lv. HND by JL-31 (Mr. Doi)
		16:00	Ar. at BKK
		18:20	Lv. BKK by TG-584 (Dr. Yoshizawa, Ms. Sakurai, Mr. Ogawa & Mr. Doi)
		19:35	Ar. at PNH
02	11 Dec. (Thu.)	08:00	Courtesy Call to JICA, Mr. Izaki, Mr. Kojima, Mr. Inokuchi, Mr. Nishihara & Ms. Mizusawa submission and explanation of the Draft Report and Confirmation of the Schedule (Dr. Yoshizawa, Ms. Sakurai, Mr. Ogawa & Mr. Doi)
		10:00	Courtesy call to MOH, Dr. Sung Vinttak and submission and explanation of the Draft Report and Confirmation of the Schedule (Dr. Yoshizawa, Ms. Sakurai, Mr. Ogawa & Mr. Doi)
		12:00	Lv. Phnom Penh
		15:45	Ar. at Svay Rieng
		16:00	Courtesy call to PHD, Dr. Ke Rotha and submission and explanation of the Draft Report and Confirmation of the Schedule
03	12 Dec. (Fri.)	09:00	Courtesy call to Suvay Rieng Hospital, Dr. Chan Dara and explanation of the Draft Report and Confirmation of the Schedule (Dr. Yoshizawa, Ms. Sakurai, Mr. Ogawa & Mr. Doi)
		all day	Meeting with each department
04	13 Dec. (Sat.)	10:45	Lv. HND by TG-683 (Mr. Koroki)
		15:45	Ar. at BKK
		18:20	Lv. BKK by TG-584
		19:35	Ar. at PNH
		all day	Data reduction (Dr. Yoshizawa, Ms. Sakurai, Mr. Ogawa & Mr. Doi)

No.	Date	Time	Activity
05	14 Dec. (Sun.)	09:00	Lv. Phnom Penh (Mr.Koroki)
		12:00	Ar. at Svay Rieng
		13:00	Internal meeting (Mr.Koroki, Dr. Yoshizawa, Ms. Sakurai, Mr. Ogawa & Mr. Doi)
		14:00	Observation of Vabet (Mr.Koroki, & Ms. Sakurai, Data reduction (Dr. Yoshizawa, Mr. Ogawa & Mr. Doi)
06	15 Dec. (Mon.)	08:30	Meeting with Svay Rieng Hospital (Mr.Koroki, Dr. Yoshizawa, Ms. Sakurai, Mr. Ogawa & Mr. Doi)
		14:30	Meeting with PHD for the Minutes of Meeting
07	16 Dec. (Tue.)	08:00	Meeting with Svay Rieng Hospital (Mr.Koroki, Dr. Yoshizawa, Ms. Sakurai, Mr. Ogawa & Mr. Doi)
		13:00	Lv. Svay Rieng
		15:45	Ar. at Phnom Penh
		16:00	Meeting with NMCHC, Dr. Egami for Soft Component
08	17 Dec. (Wed.)	09:00	Meeting with MOH, Dr. Sung Vintak for the Minutes of Meeting (Mr.Koroki, Dr. Yoshizawa, Ms. Sakurai, Mr. Ogawa & Mr. Doi)
		15:30	Meeting with NMCHC, leader of training unit for Soft Component
09	18 Dec. (Thu.)	09:00	Meeting with Kumer-Soviet Hospital for Soft Component (Mr.Koroki, Dr. Yoshizawa, Ms. Sakurai, Mr. Ogawa & Mr. Doi)
		15:30	Courtesy call to MOH, Prof. Eng Hout
10	19 Dec. (Fri.)	10:00	Signing on the Minutes of Meeting at MOH (Mr.Koroki, Dr. Yoshizawa, Ms. Sakurai, Mr. Ogawa & Mr. Doi)
		11:30	Report to JICA
		15:00	Report to EOJ
		20:35	Lv. PNH by TG-585 (Mr. Koroki & Dr. Yoshizawa)
		21:40	Ar. at BKK
		22:35	Lv. BKK by TG-640 (Mr. Koroki)
		23:55	Lv. BKK by TG-642 (Dr. Yoshizawa)
		19:30	Lv. PNH by PG-936 (Mr. Ogawa & Mr. Doi)
		20:40	Ar. at BKK
		22:25	Lv. BKK by JL-034
11	20 Dec. (Sat.)	06:15	Ar. at HND (Mr. Koroki)
		07:35	Ar. at NRT (Dr. Yoshizawa)
		06:00	Ar. at HND (Mr. Ogawa & Mr. Doi)
		10:00	Lv. PNH by TG-581 (Ms. Sakurai)
		11:05	Ar. at BKK
		14:50	Lv. BKK by TG-660
		22:30	Ar. at HND

3. List of Parties Concerned in the Recipient Country

Organization	Position	Name	
Ministry of Health (MOH)	Secretary of State	Prof. ENG HUOT	
	Director, Department of International Cooperation (DIC)	Dr. SUNG VINNTAK, M.D., MBA, MPH	
	Deputy Director, DIC	Ms. THEME VIRAVANN	
	NGO Officer, DIC	Mr. KIM SAMNANG	
	Chief of Hospital Service Bureau, Hospital Service Department	Dr. CHEU SIVUTHY	
	Senior Planning Officer of HSSP2	Dr. KHUON VIBOL	
	Deputy Director of Budget and Finance	Ms. KHOUT THAVARY	
	Chief, Bureau of Health Information	Dr. KHOL KHEMARARY	
	Chief, Bureau of Quality Assurance	Dr. CHON SINOUN	
Svay Rieng Provincial Health Department (PHD)	Director	Dr. KE ROTH	
	Deputy Director	Dr. VORN VINARA	
	Deputy Director	Dr. AN SOPHAT	
	Deputy Director	Dr. KUCH SITHA	
	Deputy Director	Dr. MOURNG SOPHAL	
	Technical Office	Dr. OUM SARON	
	Chief of Account Office	Dr. HEM BELL NALY	
	Chief of Administration Office	Ms. YOU PHEACH	
Svay Rieng Provincial Hospital	Director	Dr. CHAN DARA	
	Deputy Director	Dr. MONH SOKHA	
	Deputy Director (Surgery)	Chief of Department	Dr. THONG UM SOTHEA
		Chief Nurse	Mr. MOK SOVANN
		MD	Dr. KHEM NAK
	Surgery	Chief of Ward	Mr. KHVAN SAM OEUN
		Anesthetist	Dr. SOEUNG THOEUN
		Anesthetist	Dr. MOCH SORN
	Laboratory	Chief of Department	Mr. KHEK SAM Y
		Technologist	Mr. VICHHAY POON
		Deputy Chief	Ms. SOUS RATHANA
	OB/GY	Chief of Department,	Dr. PICH SOTHY
		MD	Dr. YOURK PUT VISAL
		Nurse	Ms. KONG BUNNA
	Imagery	Chief of Department	Dr. MONH SOKHA
	X-Ray	Chief of Department	Mr. SIN THANG
		Technician	Mr. OUK SARUN
	Pediatric	MD	Mr. SO BORAN
		Nurse	Mr. PRUM SARITH
		Nurse	Ms. HEOK TICHON
	Out-patient	MD	Dr. THACK SIUSOVUTHY
	ENT	MD	Dr. BY DAVY
	Dentist	MD	Dr. CHAN SALY
Nurse		Ms. SEK NICHITH	
Svay Rieng OD	OD Director	Mr. TEN SABONN	
Chiphu Hospital	Director	Dr. PRAK SAMBATH	
Chiphu OD	OD Director	Dr. SO SONARY	
Romeas Haek Referral Hospital	Director	Dr. HEAV SOSOTA	

Organization	Position	Name	
Svay Chrum HC	Chief of HC, Nurse	Mr. SO CHHEA	
	MA	Mr. LAM CHEN	
Svay Rieng EDC	Chief of Network	Mr. SORN SIPHAT	
Svay Rieng Provincial Police	Deputy Provincial Police Commissioner	Bg. PRAK CHAM	
	Prevention and Fire Fighting unit	Chief	Lt. col. BOU SAREN
		Deputy Chief	Maj. OUK SIEN SYNA
Provincial Public Works	Chief Office	Mr. MEM PHANN	
Provincial Water Supply Department	Network Department.	Mr. ONR KOMPHEAK	
		Mr. SENG VANNY	
Meteorology and Water Resource Department	Meteorology and Hydrology Office	Mr. KEAN CHHUM	
	Chief of Administration Office	Mr. KOL SONGDY	
National Maternal and Child Health Center	Deputy Director	Prof. KETH LY SOTHA	
Khmer-Soviet Friendship Hospital	Vice Director	Dr. CHAK THIDA	
Pisnoka International Corp. (Contractor)	Managing Director	Mr. SOK SOTHYRA	
	General Manager	Mr. KHOU SOKAY	
Saita Corporation (Contractor)	Chief Engineer	Mr. KENTARO CHIA	
Jardine Schndler (Elevator)	General Manager	Mr. THANH TRAN	
Angkor Elevator Service & Maintenance (Elevator)	Project Manager	Mr. TRAN VAN HOC	
International Elevator Co., Ltd. (Elevator)	Deputy Director	Mr. CHEA HOR	
Long Term Development Co., Ltd. (Local Agent for Medical Equipment)	General Manager	Mr. STEFANOV ARFAN	
	Medical Assistant	Mr. Phin Sopheap	
Medicom Co., Ltd. (Local Agent for Medical Equipment)	Managing Director	Mr. JEAN YVES CATRY	
Kuang Hsien Medical Instrument Co., Ltd. (Local Agent for Medical Equipment)	General Secretary	Mr. LAY KIM TECH	
Medical Equ & Electro-Technical Services (MEES)	General Manager	Mr. SAM TETRA	
MET Group Co., Ltd. Medical Equipment Technology (Local Agent for Medical Equipment)	Managing Director	Mr. KEO VIBOL	
Dynamic Pharma Co., Ltd. (Local Agent for Medical Equipment)	Managing Director	Mr. CHAN HUY LUONG	
	Product MGR 1, EQP Dept.	Mr. HOR THEARITH	
	Service Supervisor, EQP Dept.	Mr. CHEY SOK	
	Sales supervisor, EQP Dept.	Mr. MA PUTHY	
Eastern Worldwide Logistics Ltd. (Logistic Company)	Assistant Manager	Ms. BUNCHHENG CHEAM ELITE	
	Sales & Operation	Mr. PAGNE MANN	
Cam Freight Services	Import Manager	Ms. NAROM TANN	
Twin Logistics (Cambodia) Co., Ltd. (Logistic Company)	Operation Manager	Ms. LI MEI JUAN	
Victor Furniture Shop (Office Furniture Distributor)	Manager	Ms. HONG	
Modern Office Furniture (Office Furniture Distributor)	Sales Manager	Mr. SOK SODANY	
Discountz Furniture Shop (Office Furniture Distributor)	Manager	Mr. BOU DARY	
Office & Home Furniture Center (Office Furniture Distributor)	Sales Manager	Ms. THOEUN	

Organization	Position	Name
Second Hand (Public Interest Incorporated Association)		Ms. YASUKO NITTA
		Dr. TAKESHI WATANABE, M.D.
Embassy of Japan	Second Secretary	Mr. MORIYASU YONAMINE
JICA Cambodia Office	Chief Representative	Mr. HIROSHI IZAKI
	Senior Representative (until Sep., 2014)	Mr. HIROSHI TAKEUCHI
	Senior Representative (from Oct., 2014)	Mr. TAKEHARU KOJIMA
	Representative	Mr. KUNIHIRO INOKUCHI
	Senior Program Officer	Ms. AYA MIZUSAWA
	Project Formulation Advisor	Mr. TETSUMA NISHIHARA
	Program Officer	Mr. SOUN VEASNA
	Project for Improving Maternal & New Born Care, Chief Advisor	Dr. YURIKO EGAMI
	MEDEM2, Chief Advisor	Mr. TAKESHI MATSUO
Project Formulation Advisor	Mr. TARO TANZAKI	

4. Minutes of Discussions

4-1. Outline Design Survey

**MINUTES OF DISCUSSIONS
ON PREPARATORY SURVEY ON THE PROJECT FOR
REHABILITATION OF PROVINCIAL HOSPITAL
IN THE KINGDOM OF CAMBODIA**

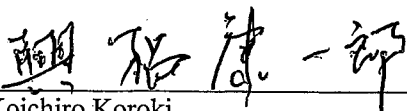
In response to the request from the Royal Government of Cambodia (hereafter referred to as “Cambodia”), the Government of Japan decided to conduct a Preparatory Survey on the Project for Rehabilitation of Provincial Hospital in Cambodia (hereafter referred to as “the Project”) and entrusted the study to the Japan International Cooperation Agency (hereafter referred to as “JICA”).

JICA sent to the Kingdom of Cambodia the Preparatory Survey Team (hereafter referred to as “the Team”), headed by Mr. Koichiro KOROKI, Senior Assistant Director, Procurement Department, JICA and was scheduled to stay in the country from 3 August to 29 August 2014.

The Team held discussions with the officials concerned of the Royal Government of Cambodia and conducted a field survey.

In the course of discussions and field survey, both sides confirmed the main items described in the attached sheets.

Phnom Penh, 19 August 2014



Mr. Koichiro Koroki
Leader, Preparatory Survey Team
Japan International Cooperation Agency
Japan



Professor Eng Huot
Secretary of State,
Ministry of Health
The Kingdom of Cambodia

ATTACHMENT

1. Objective of the Project

The objective of the Project is to improve the quality of health services provided at the Svay Rieng Provincial Referral Hospital by construction of facilities and procurement and installation of medical equipment.

2. Project Site

The Project site is the Svay Rieng Provincial Referral Hospital in Svay Rieng province.

3. Responsible and Implementing Organizations

The responsible and implementing organizations of the Project are the Svay Rieng Provincial Referral Hospital, the Svay Rieng Provincial Health Department and the Ministry of Health (hereafter referred as “Cambodian side”).

4. Items Requested by Cambodia

4-1. The final requested facilities are described in Annex-1.

4-2. The final requested medical equipment are described in Annex-2.

4-3. JICA will assess the appropriateness of the request and will recommend to the Government of Japan for approval.

5. Japan's Grant Aid Scheme

5-1. The Cambodian side understands the Japan's Grant Aid Scheme which was explained by the Team as described in Annex-3.

5-2. The Cambodian side will take necessary measures, described in Annex-4, for smooth implementation of the Project, as a condition for the Japan's Grant Aid to be implemented.

6. Schedule of the Study

6-1. The Team will proceed with further studies in Cambodia until 29 August 2014.

6-2. JICA will prepare the draft preparatory survey report, and dispatch a mission team after the consent of the Government of Japan in order to explain the contents of the report to the Cambodian side in mid-December 2014.

6-3. In case that the contents of the report is accepted in principle by Cambodia, JICA will complete the final preparatory survey report and send it to the Ministry of Health, the Kingdom of Cambodia.



6-4. The above schedule is tentative and subject to change.

7. Other Relevant Issues

7-1. Both sides agreed to modify the name of the Project to “the Project for Improvement of Svay Rieng Provincial Referral Hospital”. The official title will be finally confirmed in the Exchange of Note (E/N) if the Project is implemented.

7-2. Both sides agreed on the location for the construction of the facilities as per Annex-5.

7-3. The Cambodian side agreed to secure sufficient staff and budget for the operation and maintenance of the facilities and medical equipment provided.

7-4. The Cambodian side agreed to undertake the rehabilitation of the existing buildings, and also transfer and re-installation of some existing equipment, if required.

7-5. The Cambodian side agreed to be responsible for site clearance including demolishing of the Emergency and ICU building (building D) before the tender for construction of the new building by Japan’s Grant Aid.

7-6. The Team explained that the Government of Japan was considering funding maintenance service of some major medical equipment in Japan’s Grant Aid. Keeping this development in view, both sides agreed to consider attaching maintenance service contract to the major medical equipment that need frequent maintenance.

7-7. Both sides agreed that there was a necessity of soft component, which will be provided by the Japanese side, for operation and maintenance of the medical equipment.

7-8. The Cambodian side shall take necessary measures to exempt Japanese nationals who will be engaged in the Project from all duties and related fiscal charges which may be imposed in the Kingdom of Cambodia with respect to import and local procurement of equipment and services supplied under the verified contract.

7-9. Both sides confirmed that the drawing for site plan, equipment list and other technical information related to the Project shall not be released before the tender to be held in the implementation stage.

END



Annex-1: List of requested facilities

Annex-2: List of requested equipment

Annex-3: Japan's Grant Aid

Annex-4: Major undertakings to be taken by each Government

Annex-5: A site plan for the facility



List of requested facilities

No.	Section	Point	Component of requested department
1	Clinical Services	1.1	Outpatient Consultation (Triage)
		1.2	Emergency Service
		1.3	Operation Theater and ICU
		1.4	Delivery
		1.5	Obstetrics/ Gynecology Ward
2	Para Clinical Services	2.1	Imagery
3	Technical Work	3.1	Sterilization
4	Hospital Infrastructure	4.1	Electricity reception and Generator
		4.2	Sewage Treatment System
5	Others	5.1	Corridor, Toilet and Common space
		5.2	Slope
		5.3	External Works

List of Requesting Equipment

Code No.	Description of Medical Equipment	Quantity	Unit
1. Outpatients Consultations			
OD-01	Sterilizing Drum	2	Units
OD-02	Film Viewer	1	Unit
OD-03	Diagnostic Set	1	Set
OD-04	Weighing Scale (Adult)	1	Unit
OD-05	Instrument Tray Stand	1	Unit
OD-06	Stretcher	2	Unit
OD-07	Examination Bed	1	Set
OD-08	Doctor's Desk & Chair	1	Set
OD-09	Examination Light	1	Set
OD-10	Patient Stool	1	Set
2. ENT Unit			
EN-01	Tonsillectomy and Adenoidectomy Set	2	Sets
EN-02	Examination Instrument Set for ENT	1	Set
EN-03	ENT Surgical Unit	1	Unit
EN-04	Instrument Tray Stand	2	Units
EN-05	ENT Chair w/ENT Unit	1	Unit
EN-06	Film Viewer	1	Unit
EN-07	Irrigation Stand	2	Units
EN-08	Head Light	1	Unit
3. Dental Unit			
DT-01	Hand Instrument Set for Dental	1	Set
DT-02	Dental Chair Unit	2	Units
DT-03	Micro Motor	2	Units
DT-04	Ultrasonic Scaler	2	Units
DT-05	Light Cure Machine	2	Units
DT-06	Dental X- ray Machine	1	Unit
DT-07	Autoclave	1	Unit
4. Emergency Services Department & ICU			
EM-01	Suction Machine (Electric)	3	Units
EM-02	Suction Machine (Foot operating)	1	Unit

EM-03	Wash Hand Bowl Stand	2	Units
EM-04	Dressing Cart	3	Units
EM-05	Denudating Set	2	Sets
EM-06	ICU Bed	1	Set
EM-07	Film Viewer	1	Unit
EM-08	Irrigation Stand	6	Units
EM-09	Oxygen Cylinder Set	4	Sets
EM-10	Patient Monitor	8	Units
EM-11	Ventilator	3	Units
EM-12	Defibrillator	1	Unit
EM-13	Operating Light (Mobile)	2	Units
EM-14	ECG Unit	1	Unit
EM-15	Ultrasonic Scaler	1	Unit
EM-16	Stretcher	2	Units
EM-17	Nebulizer	2	Units
EM-18	Syringe Pump	2	Units
EM-19	Infusion Pump	2	Units
EM-20	Phototherapy Unit	1	Units
EM-21	Infant Incubator	1	Unit
EM-22	Emergency Bed	1	Set
EM-23	Dressing Instrument Set	3	Unit
EM-24	Instrument Tray Stand	2	Units
EM-25	Sterilizing Drum	2	Units
EM-26	Doctor's Desk & Chair	1	Set
EM-27	Patient Stool	1	Set
5. Operating Theatre			
OT-01	Anesthesia Machine	4	Units
OT-02	Suction Machine (Electric)	4	Units
OT-03	Suction Machine (Table Top)	1	Unit
OT-04	Dressing Cart	4	Units
OT-05	Electro Surgical Unit	2	Units

5/01

6

OT-06	Operating Light (Ceiling Mount Type)	4	Units
OT-07	Film Viewer	4	Units
OT-08	Oxygen Cylinder Set	2	Sets
OT-09	Patient Monitor	5	Units
OT-10	Stretcher	3	Units
OT-11	Sterilizer System for CSSD	1	Set
OT-12	Anesthesia Table	4	Units
OT-13	Operating Table	4	Units
OT-14	Orthopedic Accessories Set for Operating Table	1	Set
OT-15	Defibrillator	1	Unit
OT-16	Ventilator	2	Units
OT-17	C-arm X-ray Unit	1	Units
OT-18	Infusion Pump	3	Units
OT-19	Nebulizer	2	Units
OT-20	Washing Machine	1	Unit
OT-21	Drying Machine	1	Unit
OT-22	Arthroscope	1	Unit
OT-23	Urethroscope	1	Unit
OT-24	Microsurgery Equipment Set	1	Set
OT-25	Dressing Instrument Set	4	Sets
OT-26	Instrument Tray Stand	8	Units
OT-27	Sterilizing Drum	8	Units
OT-28	Wash Hand Bowl Stand	4	Units
OT-29	Doctor's Stool for Anesthetists	4	Units
6. Surgical Service Department			
SG-01	Suction Machine (Electric)	1	Unit
SG-02	Dressing Cart	3	Units
SG-03	Minor Surgery Instrument Set	30	Sets
SG-04	Sterilizing Drum	4	Units
SG-05	Film Viewer	1	Unit
SG-06	Oxygen Cylinder Set	4	Sets

SG-07	Plaster Cutter (Electric)	1	Unit
SG-08	Stretcher	4	Units
SG-09	Instrument Tray Stand	4	Units
SG-10	Examination Lamp	2	Units
SG-11	Dressing Instrument Set	3	Units
SG-12	Examination Bed	1	Set
SG-13	Doctor's Desk & Chair	1	Set
SG-14	Patient Stool	1	Set
7. Laboratory			
LB-01	Hematocrit Centrifuge	1	Unit
LB-02	Centrifuge	2	Units
LB-03	Automatic Hematology Analyzer	1	Unit
LB-04	Rotator	1	Unit
LB-05	Spectrophotometer	1	Unit
LB-06	Test tube mixer	1	Unit
LB-07	Automatic pipette Set	1	Set
LB-08	Hemoglobin Meter	2	Units
LB-09	Hot Plate Stirrer	1	Unit
LB-10	Incubator	1	Unit
LB-11	Electrolyte Analyzer	1	Unit
LB-12	Coagulation Analyzer	1	Unit
LB-13	Urine Analyzer	1	Unit
LB-14	Urine Gravity Analyzer	1	Unit
LB-15	ELISA System	1	Set
LB-16	Dry Sterilizer	1	Unit
LB-17	Autoclave	1	Unit
LB-18	Microscope	1	Unit
LB-19	Freezer	3	Units
LB-20	Refrigerator	3	Units
8. Imagery			
XR-01	Dosimeter	2	Units

XR-02	Film Viewer	1	Unit
XR-03	Ultrasonic Scaler	1	Unit
XR-04	ECG Unit	1	Unit
XR-05	CR System	1	Set
XR-06	Examination Bed	2	Units
XR-07	Couch for Waiting Space for Waiting Space	1	Set
XR-08	Doctor's Desk & Chair	1	Set
<i>9. Pediatrics Department</i>			
PD-01	Suction Machine (Foot operating)	1	Unit
PD-02	Suction Machine (Electric)	1	Unit
PD-03	Sterilizing Drum	2	Units
PD-04	Diagnostic Set	2	Sets
PD-05	Intubation Forceps (Magill, Infant)	2	Pcs.
PD-06	Nebulizer	4	Units
PD-07	Film Viewer	1	Unit
PD-08	Infusion Pump	3	Units
PD-09	Oxygen Cylinder Set	2	Sets
PD-10	Resuscitation Bag (Infant)	1	Unit
PD-11	Resuscitation Bag (Child)	1	Unit
PD-12	Height & Weighing Scales Set for Infant	1	Unit
PD-13	Height Scale	1	Unit
PD-14	Weighing Scale (Hanging Type)	1	Unit
PD-15	Sphygmomanometer (Aneroid, Infant)	1	Unit
PD-16	Instrument Tray Stand	2	Units
PD-17	Infant Incubator	1	Unit
PD-18	Phototherapy Unit	1	Unit
PD-19	Patient Monitor	2	Units
PD-20	Dressing Cart	2	Units
PD-21	Dressing Instrument Set	2	sets
<i>10. General Medicine Department</i>			
MD-01	Suction Machine (Electric)	2	Units

MD-02	Dressing Cart	2	Units
MD-03	Denudating Set	1	Set
MD-04	Sterilizing Drum	2	Units
MD-05	Diagnostic Set	1	Set
MD-06	Film Viewer	1	Unit
MD-07	Oxygen Cylinder Set	2	Sets
MD-08	Weighing Scale (Adult)	1	Unit
MD-09	Stretcher	2	Units
MD-10	Instrument Tray Stand	3	Units
MD-11	Trocar	1	Pcs.
MD-12	Irrigation Stand	2	Units
MD-13	Patient Monitor	2	Units
MD-14	Dressing Cart	2	Units
MD-15	Dressing Instrument Set	2	Sets
MD-16	Examination Bed	1	Set
MD-17	Doctor's Desk & Chair	1	Set
MD-18	Patient Stool	1	Set
11- Obstetrics/Gynecology Department			
OG-01	Suction Machine (Electric)	2	Units
OG-02	Delivery Bed	3	Units
OG-03	Gynecological Table	2	Units
OG-04	Fetal Doppler Detector	1	Unit
OG-05	Dilatation & Curettage Set	2	Set
OG-06	Obstetric Forceps	2	Pcs.
OG-07	Sterilizing Drum	5	Units
OG-08	Operating Light (Mobile)	3	Units
OG-09	Film Viewer	1	Unit
OG-10	Oxygen Cylinder Set	3	Sets
OG-11	Weighing Scale (Adult)	1	Unit
OG-12	Weighing Scale (Infant)	1	Unit
OG-13	Dressing Instrument Set,	2	Sets

JAPAN'S GRANT AID

The Government of Japan (hereinafter referred to as “the GOJ”) is implementing the organizational reforms to improve the quality of ODA operations, and as a part of this realignment, a new JICA law was entered into effect on October 1, 2008. Based on this law and the decision of the GOJ, JICA has become the executing agency of the Grant Aid for General Projects, for Fisheries and for Cultural Cooperation, etc.

The Grant Aid is non-reimbursable fund provided to a recipient country to procure the facilities, equipment and services (engineering services and transportation of the products, etc.) for its economic and social development in accordance with the relevant laws and regulations of Japan. The Grant Aid is not supplied through the donation of materials as such.

1. Grant Aid Procedures

The Japanese Grant Aid is supplied through following procedures :

- Preparatory Survey
 - The Survey conducted by JICA
- Appraisal & Approval
 - Appraisal by the GOJ and JICA, and Approval by the Japanese Cabinet
- Authority for Determining Implementation
 - The Notes exchanged between the GOJ and a recipient country
- Grant Agreement (hereinafter referred to as “the G/A”)
 - Agreement concluded between JICA and a recipient country
- Implementation
 - Implementation of the Project on the basis of the G/A

2. Preparatory Survey

(1) Contents of the Survey

The aim of the preparatory Survey is to provide a basic document necessary for the appraisal of the Project made by the GOJ and JICA. The contents of the Survey are as follows:

- Confirmation of the background, objectives, and benefits of the Project and also institutional capacity of relevant agencies of the recipient country necessary for the implementation of the Project.
- Evaluation of the appropriateness of the Project to be implemented under the Grant Aid Scheme from a technical, financial, social and economic point of view.

- Confirmation of items agreed between both parties concerning the basic concept of the Project.
- Preparation of a outline design of the Project.
- Estimation of costs of the Project.

The contents of the original request by the recipient country are not necessarily approved in their initial form as the contents of the Grant Aid project. The Outline Design of the Project is confirmed based on the guidelines of the Japan's Grant Aid scheme.

JICA requests the Government of the recipient country to take whatever measures necessary to achieve its self-reliance in the implementation of the Project. Such measures must be guaranteed even though they may fall outside of the jurisdiction of the organization of the recipient country which actually implements the Project. Therefore, the implementation of the Project is confirmed by all relevant organizations of the recipient country based on the Minutes of Discussions.

(2) Selection of Consultants

For smooth implementation of the Survey, JICA employs (a) registered consulting firm(s). JICA selects (a) firm(s) based on proposals submitted by interested firms.

(3) Result of the Survey

JICA reviews the Report on the results of the Survey and recommends the GOJ to appraise the implementation of the Project after confirming the appropriateness of the Project.

3. Japan's Grant Aid Scheme

(1) The E/N and the G/A

After the Project is approved by the Cabinet of Japan, the Exchange of Notes(hereinafter referred to as "the E/N") will be signed between the GOJ and the Government of the recipient country to make a pledge for assistance, which is followed by the conclusion of the G/A between JICA and the Government of the recipient country to define the necessary articles to implement the Project, such as payment conditions, responsibilities of the Government of the recipient country, and procurement conditions.

(2) Selection of Consultants

In order to maintain technical consistency, the consulting firm(s) which conducted the Survey will be recommended by JICA to the recipient country to continue to work on the Project's implementation after the E/N and G/A.

(3) Eligible source country

Under the Japanese Grant Aid, in principle, Japanese products and services including transport or those of the recipient country are to be purchased. When JICA and the Government of the recipient country or its designated authority deem it necessary, the Grant Aid may be used for the purchase of the products or services of a third country. However, the prime contractors, namely, constructing and procurement firms, and the prime consulting firm are limited to "Japanese nationals".

(4) Necessity of "Verification"

The Government of the recipient country or its designated authority will conclude contracts denominated in Japanese yen with Japanese nationals. Those contracts shall be verified by JICA. This "Verification" is deemed necessary to fulfill accountability to Japanese taxpayers.

(5) Major undertakings to be taken by the Government of the Recipient Country

In the implementation of the Grant Aid Project, the recipient country is required to undertake such necessary measures as Annex.

(6) "Proper Use"

The Government of the recipient country is required to maintain and use properly and effectively the facilities constructed and the equipment purchased under the Grant Aid, to assign staff necessary for this operation and maintenance and to bear all the expenses other than those covered by the Grant Aid.

(7) "Export and Re-export"

The products purchased under the Grant Aid should not be exported or re-exported from the recipient country.

(8) Banking Arrangements (B/A)

a) The Government of the recipient country or its designated authority should open an account under the name of the Government of the recipient country in a bank in Japan (hereinafter referred to as "the Bank"). JICA will execute the Grant Aid by making payments in Japanese yen to cover the obligations incurred by the Government of the recipient country or its designated authority under the Verified Contracts.

b) The payments will be made when payment requests are presented by the Bank to JICA under an Authorization to Pay (A/P) issued by the Government of the recipient country or its designated authority.

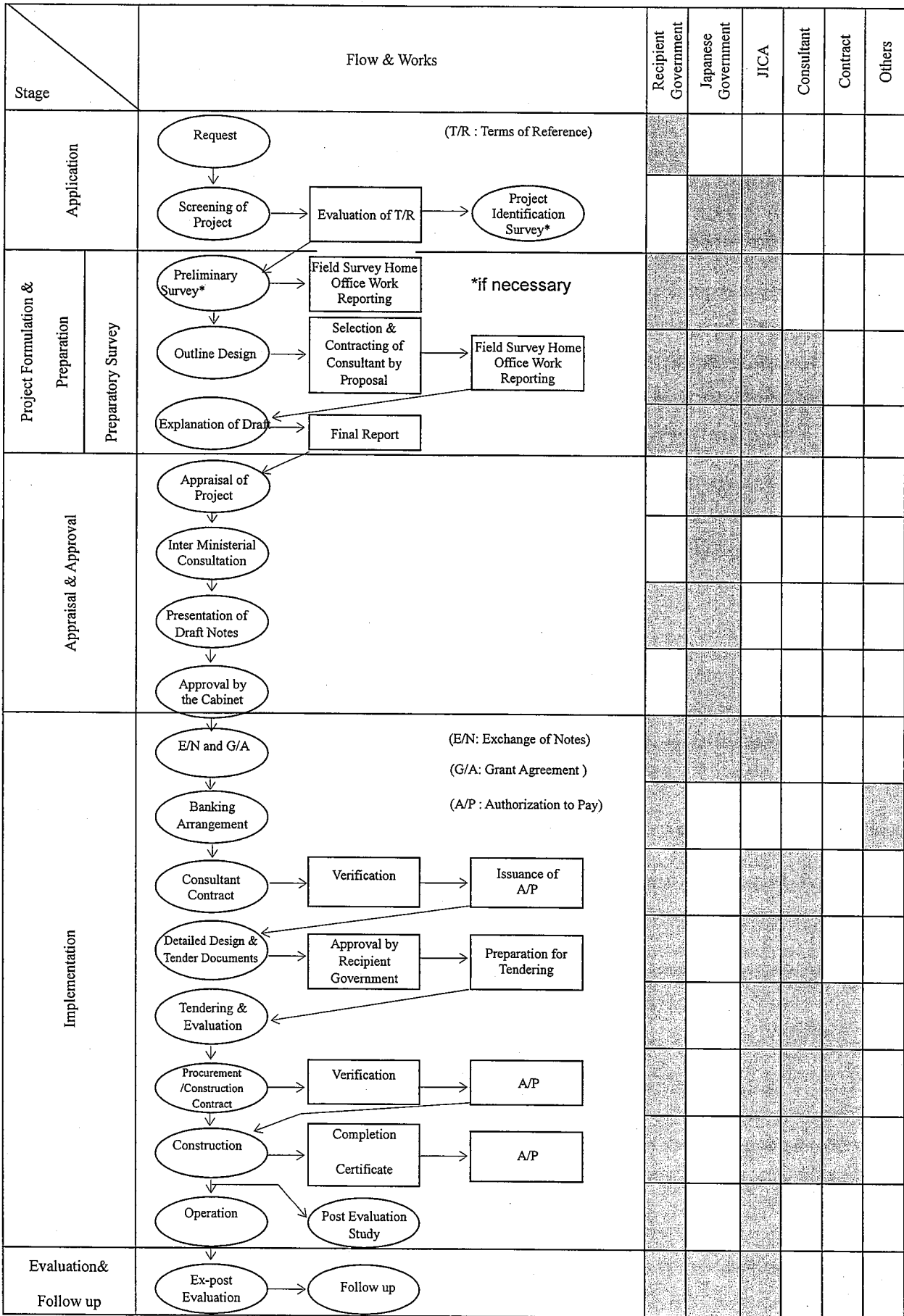
(9) Authorization to Pay (A/P)

The Government of the recipient country should bear an advising commission of an Authorization to Pay and payment commissions paid to the Bank.

(10) Social and Environmental Considerations

A recipient country must carefully consider social and environmental impacts by the Project and must comply with the environmental regulations of the recipient country and JICA socio-environmental guidelines.

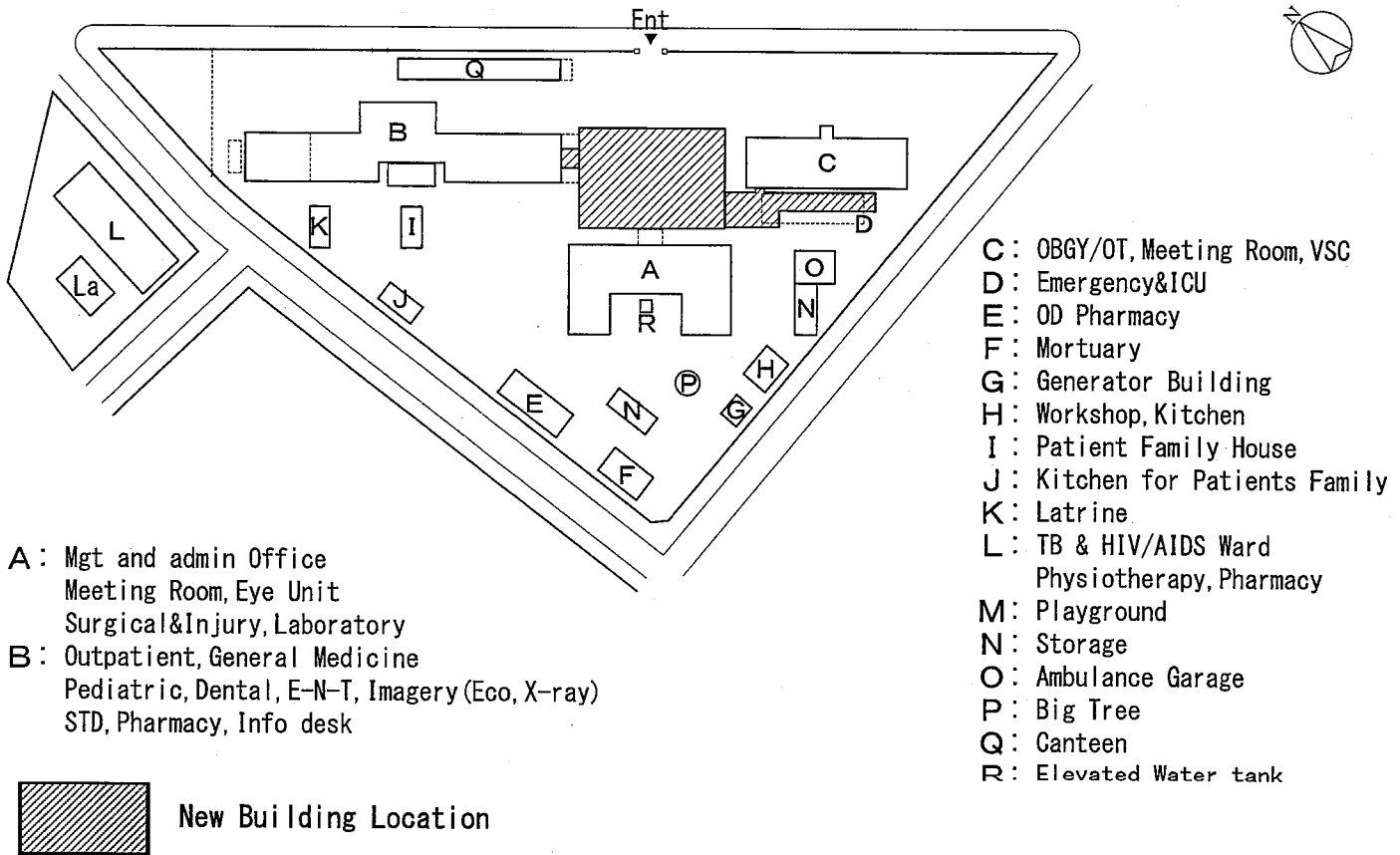
FLOW CHART OF JAPAN'S GRANT AID PROCEDURES



No.	Items	To be covered by Grant Aid	To be covered by Recipient Side
1	to secure a lot of land necessary for the implementation of the Project and to clear the site;		•
2	To construct the following facilities		
	1) The building	•	
	2) The gates and fences in and around the site		•
	3) The parking lot	•	
	4) The road within the site	•	
3	5) The road outside the site		•
	To provide facilities for distribution of electricity, water supply and drainage and other incidental facilities necessary for the implementation of the Project outside the site		
	1) Electricity		
	a. The distributing power line to the site		•
	b. The drop wiring and internal wiring within the site	•	
	c. The main circuit breaker and transformer	•	
	2) Water Supply		
	a. The city water distribution main to the site		•
	b. The supply system within the site (receiving and elevated tanks)	•	
	3) Drainage		
	a. The city drainage main (for storm sewer and others to the site)		•
	b. The drainage system (for toilet sewer, common waste, storm drainage and others) within the site	•	
	4) Gas Supply		
	a. The city gas main to the site		•
	b. The gas supply system within the site	•	
	5) Telephone System		
	a. The telephone trunk line to the main distribution frame/panel (MDF) of the building		•
b. The MDF and the extension after the frame/panel	•		
6) Furniture and Equipment			
a. General furniture		•	
b. Project equipment	•		
4	To ensure prompt unloading and customs clearance of the products at ports of disembarkation in the recipient country and to assist internal transportation of the products		
	1) Marine (Air) transportation of the Products from Japan to the recipient country	•	
	2) Internal transportation from the port of disembarkation to the project site	•	
5	To ensure that customs duties, internal taxes and other fiscal levies which may be imposed in the recipient country with respect to the purchase of the products and the services be exempted		•
6	To accord Japanese physical persons and / or physical persons of third countries whose services may be required in connection with the supply of the products and the services such facilities as may be necessary for their entry into the recipient country and stay therein for the performance of their work		•
7	To ensure that the Facilities and the products be maintained and used properly and effectively for the implementation of the Project		•
8	To bear all the expenses, other than those covered by the Grant, necessary for the implementation of the Project		•
9	To bear the following commissions paid to the Japanese bank for banking services based upon the B/A		
	1) Advising commission of A/P		•
	2) Payment commission		•
10	To give due environmental and social consideration in the implementation of the Project.		•

(B/A : Banking Arrangement, A/P : Authorization to pay)

Site plan for the facility



4-2. Explanation of the Draft Report

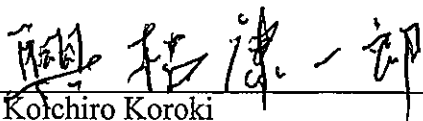
MINUTES OF DISCUSSIONS ON THE EXPLANATION OF THE DRAFT REPORT OF THE PREPARATORY SURVEY FOR THE PROJECT FOR IMPROVEMENT OF SVAY RIENG PROVINCIAL REFERRAL HOSPITAL IN THE KINGDOM OF CAMBODIA

In August 2014, the Japan International Cooperation Agency (hereinafter referred to as “JICA”) dispatched the Preparatory Survey Team on the Project for Improvement of Svay Rieng Provincial Referral Hospital (hereinafter referred to as “the Project”) to the Kingdom of Cambodia (hereinafter referred to as “Cambodia”), and through discussions, field surveys and technical examination of the results in Japan, JICA prepared the draft report of the preparatory survey.

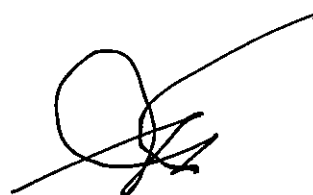
In order to explain and to consult the contents of the draft report with the Royal Government of Cambodia, JICA sent to Cambodia the Draft Report Explanation Team (hereinafter referred to as “the Team”), headed by Mr. Koichiro Koroki, Senior Assistant Director, Procurement Department, JICA from 10th to 19th December 2014.

As a result of the series of discussions, the Ministry of Health, the Kingdom of Cambodia, and the Team (hereinafter referred to as “both sides”) have confirmed the main items described in the attached sheets.

Phnom Penh, 19th December 2014 



Mr. Koichiro Koroki
Team Leader,
Draft Report Explanation Team
Japan International Cooperation Agency
Japan



Professor Eng Huot
Secretary of State
Ministry of Health
The Kingdom of Cambodia

ATTACHMENT

1. Components of the Draft Report:

The Cambodian side agreed and accepted in principle the contents of the Draft Report explained by the Team.

2. Schedule of the Study:

JICA will complete the final report in accordance with the confirmed items and send it to the Cambodian side by April 2015.

3. Japan's Grant Aid scheme:

The Cambodian side understands Japan's Grant Aid scheme and necessary measures to be taken by the Cambodian side which was explained by the Team and described in Annex-3 and Annex-4 of the Minutes of Discussions signed by both sides on 19th August 2014.

4. Confidentiality of the Project:

Both sides confirmed that all information related to the Project including detailed specifications of equipment and other technical information shall not be released to any outside parties before the signing of all the Contract(s) for the Project.

5. Measures to be taken by the Cambodian side:

5-1 In case the Project will be implemented, the Cambodian side agreed to take necessary measures listed in Annex-1 for the smooth implementation of the Project. These measures will be completed by the Cambodian side before the construction of the Project begins.

5-2 Renovation of the existing building is essential to the hospital operation after the completion of the Project. Therefore, the Cambodian side agreed to conduct the renovation work in accordance with the proposed plan in Annex-2.

5-3 To assure effectiveness and sustainability of the Project, the Ministry of Health, Provincial Health Department of Svay Rieng Province and Svay Rieng Provincial Referral Hospital agreed to cover the costs for operation and maintenance shown in Annex-3.

6. Modification of the name of the Project

Both sides confirmed that name of the project has been modified to "Improvement of Svay Rieng Provincial Referral Hospital". The official title will be finally confirmed in the Exchange of Note (E/N), if the Project is implemented.

7. Other Relevant Issues:

7-1. Confidentiality of the Project Cost Estimation

The Team explained the cost estimation of the Project described in Annex-4. Both sides agreed that the Project Cost Estimation should never be duplicated or released to any outside parties before signing of all the Contract(s) for the Project. The Cambodian side understands



that the Project Cost Estimation is not final and is subject to change.

7-2. Tentative Equipment List

Both sides agreed that the equipment specified in Annex-5 are the tentative equipment list, and final decision on the number of the equipment will be made in the final report.

7-3. Soft Component

The Team and the Cambodian side agreed that there is a necessity of Soft Component. Both sides agreed the outline of the soft component described in Annex-6. The Ministry of Health agreed to nominate candidate hospitals for the clinical training, and also to coordinate and make necessary arrangements with these hospitals for the smooth implementation of the training.

7-4. Equipment Maintenance Service

The Project will provide maintenance service for equipment listed in Annex-7. The total maintenance service period is three years. The maintenance service includes three year periodic inspection service after the handover of these equipment and two year on-call service following one year warranty period. The Cambodian side agreed to bear the expense for the replacement parts including any associated costs charged by maintenance service provider for the period of two year on-call service, if necessary. Also, both sides agreed that the annual monitoring of the maintenance service will be conducted by the Cambodian side with support of the Japanese consultants. The results will be shared with the Japanese side.

7-5. Re-installment of X-ray machinery

The Cambodian side agreed to move the X-ray machinery procured under Japanese Grant Aid project “the Project for Improvement of Medical Equipment in National, Municipal and Provincial Referral Hospitals”(FY2011) from Building B and install it into the New Main Building as soon as construction of the building is completed.

7-6. Transfer and re-installment of X-ray Protection Box

The Cambodian side agreed to move the X-ray protection box procured under Japanese Grant Aid project “the Project for Improvement of Medical Equipment in National, Municipal and Provincial Referral Hospitals”(FY2011) from Svay Rieng Provincial Referral Hospital to Chiphou Referral Hospital, if the Project is implemented. After signing of the E/N, the Cambodian side will submit the official request to the Japanese side for approval of the relocation.

Annex-1	Estimated costs and necessary measures to be taken by the Cambodian side before construction
Annex-2	Renovation plan of the existing building
Annex-3	Estimated costs to be borne by the Cambodian side for operation and maintenance
Annex-4	Estimated costs to be borne by the Japanese side
Annex-5	Tentative equipment list
Annex-6	Soft Component Plan
Annex-7	List of Equipment requires 3 year maintenance service

Annex-1 Estimated Costs and Necessary Measures to be taken by the Cambodian Side before Construction

Table-1 Estimated Costs and Necessary Measures to be taken by the Cambodian Side before Construction

Items	Draft Cost Estimation
	(US\$)
1) Demolition of Existing Buildings (Bldg.D(all), part of Bldg.A, B & Q, etc.)	30,335
2) Backfilling of Soil, Land Preparation	5,613
3) Infrastructure Lead-in and Connection Work	8,450
4) Existing Facility Renovations	14,923
5) Relocation and Procurement of Equipment/Furniture	28,000
6) Planting of Trees	3,800
7) Banking Commissions	10,401
Total	101,522

Annex-2 Renovation Plan of the Existing Building

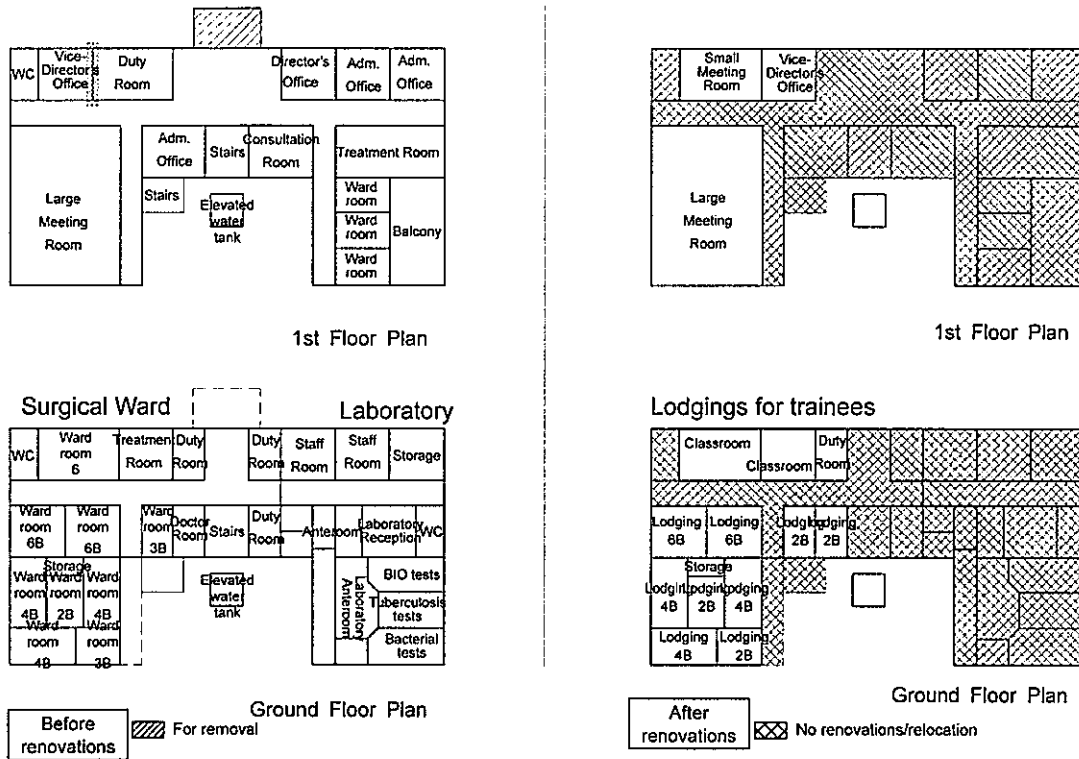
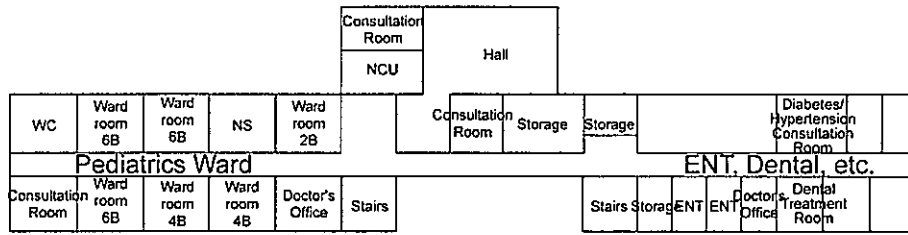


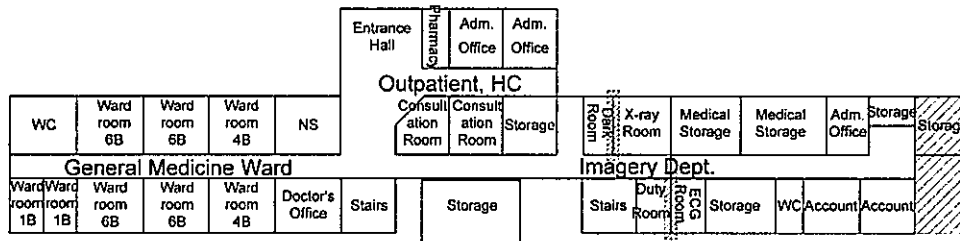
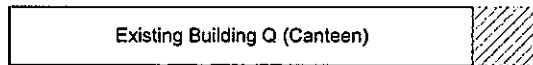
Figure-1 Post-Project Renovation and Relocation Plan for Existing Building A

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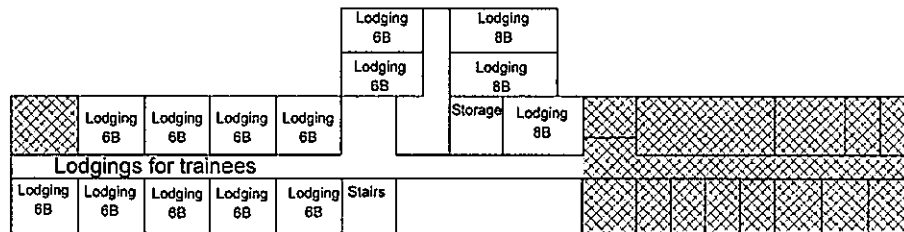


1st Floor Plan

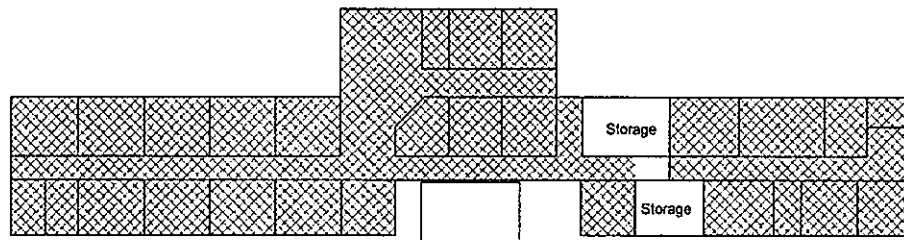


Ground Floor Plan

Before renovations For removal



1st Floor Plan



Ground Floor Plan

After renovations No renovations/relocation

Figure-2 Post-Project Renovation and Relocation Plan for Existing Building B



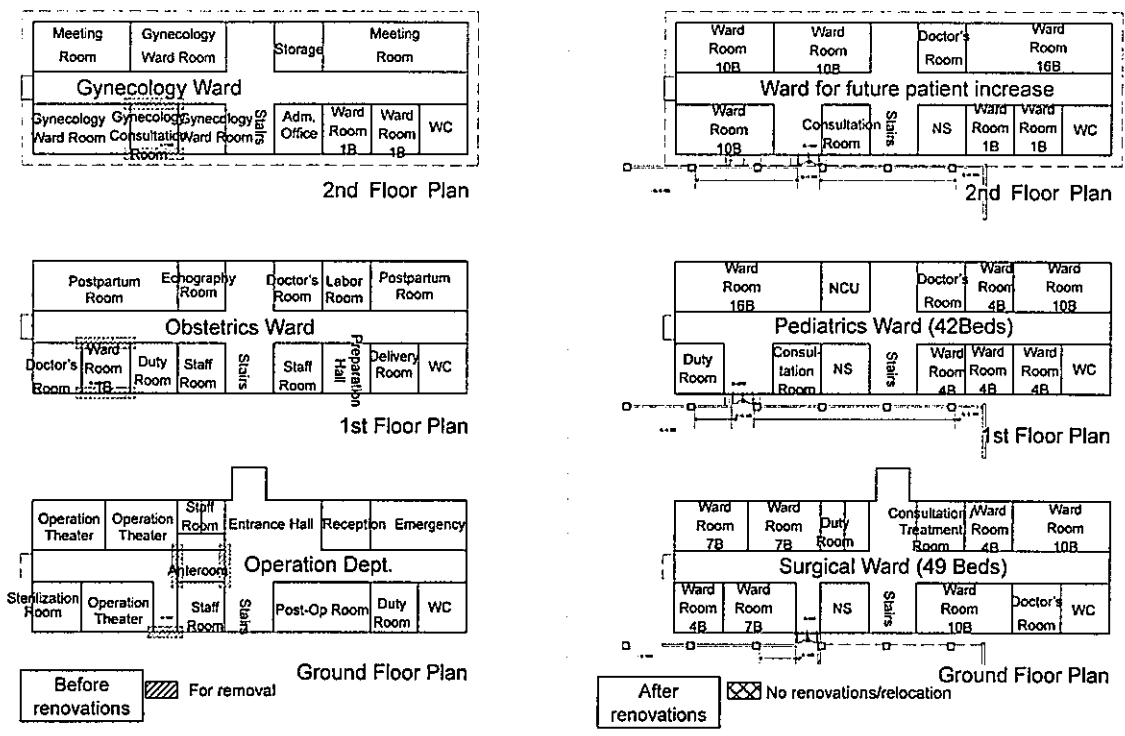


Figure-3 Post-Project Renovation and Relocation Plan for Existing Building C

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Annex-3 Estimated Costs to be borne by the Cambodian Side for Operation and Maintenance

Table-2 Estimated Costs to be borne by the Cambodian Side for Operation and Maintenance

Items	2013 Expenditures (thousand riel)	2020 Projections (thousand riel)	Rate of increase (%)
Salary	997,431	1,327,775	133.1
Bonuses	884,669	1,256,230	142.0
Pharmaceuticals	350,173	425,337	121.5
Food	17,781	24,459	137.6
Medical Equipment	25,415	43,296	170.4
Equipment Maintenance	40,228	198,462	493.3
Facility Maintenance Expenses	86,998	149,208	171.5
Electricity and Water	193,228	468,074	242.2
Gas	350,944	482,996	137.6
Administrative	28,366	30,604	107.9
Business Trip Transportation	560,154	647,077	115.5
Government Payments	14,744	20,394	138.3
Misc.	89,882	120,690	134.3
Total Expenditure	3,640,013	5,194,602	142.7

Annex-4 Estimated Costs to be borne by the Japanese Side

This page is closed due to the confidentiality.

Annex-5 Tentative Equipment List

Table-4 Tentative Equipment list

S. No.	Code. No.	Description of Medical Equipment	Q'ty	Out Patients Consultations	ENT. Unit	Dental Unit	Emergency Services Department	ICU	Operating Theater	Surgical Service Department	Laboratory	Imagery	Pediatrics Department	General Medicine Department	Obstetrics/ Gynecology Department
1	1	Anesthesia Machine	3 sets						3						
2	2	Anesthesia Table	3 sets						3						
3	4	Autoclave (Table Top Type)	2 sets			1					1				
4	5	Automatic Hematology Analyzer	1 set								1				
5	6	Automatic pipette Set	1 set								1				
6	7	Caesarian Hysterectomy Set	2 sets												2
7	8	Caesarian Section Set	2 sets												2
8	9	C-arm X-ray Unit	1 set						1						
9	10	Centrifuge	1 set								1				
10	11	Cervical RepARATION Set	1 set												1
11	12	Coagulation Analyzer	1 set								1				
12	13	Consultation Obstetric Set	1 set												1
13	14	Couch for Waiting Space for Waiting Space	5 set									1			
14	15	CR System	1 set									1			
15	16	Defibrillator	1 set						1						
16	17	Delivery Bed	3 sets												3
17	18	Delivery Instrument Set	5 sets												5
18	19	Dental Chair Unit	2 sets			2									
19	20	Dental X- ray Machine	1 set			1									
20	21	Denudating Set	4 sets				1	1						1	1
21	22	Diagnostic Set	4 sets	1									2	1	
22	23	Dilatation & Curettage Set	2 sets												2
23	24	Doctor's Desk & Chair	10 sets	3			1	1		1		1		2	1
24	25	Dosimeter	2 sets									2			
25	26	Dressing Cart	14 sets				2	1	3	3			1	2	2
26	27	Dressing Instrument Set	14 sets				2	1	3	3			1	2	2
27	28	Dry Sterilizer	1 set								1				
28	29	Dryer Machine	1 set						1						
29	30	ECG Unit	2 sets				1					1			
30	31	Electro Surgical Unit	2 sets						2						
31	32	Electrolyte Analyzer	1 set								1				
32	33	ELISA System	1 set								1				
33	34	Emergency Bed	4 set				4								
34	35	ENT Chair w/ENT Unit	1 set		1										
35	36	ENT Surgical Unit	1 set		1										
36	37	Episiotomy and Perino Repair Set	5 sets												5

S. No.	Code No.	Description of Medical Equipment	Q'ty	Out Patients Consultations	E.N.T. Unit	Dental Unit	Emergency Services Department	ICU	Operating Theater	Surgical Service Department	Laboratory	Imagery	Pediatrics Department	General Medicine Department	Obstetrics/ Gynecology Department
37	38	Examination Bed	9 sets	3						2		2		2	
38	39	Examination Instrument Set for ENT	1 set		1										
39	40	Examination Lamp	4 sets	2						2					
40	41	Fetal Doppler Detector	1 set												1
41	42	Fetal Monitor	1 set												1
42	43	Film Viewer	11 sets	1	1		1		3	1		1	1	1	1
43	44	Freezer	2 sets								2				
44	45	Gynecological Table	1 set												1
45	46	Gynecology Examination Instrument Set	2 sets												2
46	47	Hand Instrument Set for Dental	1 set			1									
47	48	Head Light	1 set		1										
48	49	Height & Weighing Scales Set for Infant	1 set										1		
49	50	Hematocrit Centrifuge	1 set								1				
50	51	Hemoglobin Meter	1 set								1				
51	52	Hot Plate Stirrer	1 set								1				
52	53	ICU Bed	6 sets					6							
53	54	Incubator	1 set								1				
54	55	Infant Incubator	2 sets				1						1		
55	56	Infusion Pump	6 sets				1	1	2				2		
56	57	Instrument Tray Stand	22 sets	1	2		1	1	6	4			1	3	3
57	58	Irrigation Stand	8 sets				3	3						2	
58	59	Laryngoscope Set (for Infant)	1 set										1		
59	60	Microscope	1 set								1				
60	61	Minor Surgery Instrument Set	20 sets							20					
61	62	Nebulizer	7 sets				1		2				4		
62	63	Obstetric Forceps	2 sets												2
63	64	Operating Light (Ceiling Mount Type)	3 sets						3						
64	65	Operating Light (Mobile)	5 sets				2								3
65	66	Operating Table	1 sets						3						
66	67	Oxygen Cylinder Set	11 sets							4			2	2	3
67	68	Patient Bed	51 sets												51
68	69	Patient Monitor	14 sets				2	2	4				2	2	2
69	70	Patient Stool	8 sets	3			1			1				2	1
70	71	Phototherapy Unit	2 sets				1						1		
71	72	Plaster Cutter (Electric)	1 set							1					
72	73	Refrigerator	2 sets								2				

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S. No.	Code No.	Description of Medical Equipment	Q'ty	Out Patients Consultations	E.N.T. Unit	Dental Unit	Emergency Services Department	ICU	Operating Theater	Surgical Service Department	Laboratory	Imagery	Pediatrics Department	General Medicine Department	Obstetrics/ Gynecology Department
73	74	Resuscitation Bag (Child)	1 set										1		
74	75	Resuscitation Bag (Infant)	1 set										1		
75	76	Rotator	1 set								1				
76	77	Spectrophotometer	1 set								1				
77	78	Sphygmomanometer (Aneroid, Infant)	1 set										1		
78	79	Sterilizer System for CSSD	1 set						1						
79	80	Sterilizing Drum	22 sets	2			1	1	6	3			2	2	5
80	81	Stretcher	13 sets	2			2		3	4				2	
81	82	Suction Machine (Electric)	12 sets				2	1	3	1			1	2	2
82	83	Suction Machine (Foot operating)	3 sets				1		1				1		
83	84	Syringe Pump	2 sets				2								
84	85	Test tube mixer	1 set								1				
85	86	Tonsillectomy and Adenoidectomy Set	2 sets		2										
86	87	Trocar	1 set											1	
87	88	Ultrasonic Scanner	2 sets				1					1			
88	90	Urine Analyzer	1 set								1				
89	91	Urine Gravity Analyzer	1 set								1				
90	92	Vacuum-extractor	1 set												1
91	93	Ventilator	4 sets				1	1	2						
92	94	Wash Hand Bowl Stand	5 sets				1	1	3						
93	95	Washing Machine	1 set						1						
94	96	Weighing Height Scale (Adult)	4 sets	1									1	1	1

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Annex-6 Soft Component Plan

Table-5 Soft Component Plan

Item	Plan of Operation
CR system (component of general X-ray machine)	Initial usage instruction and operational guidance by the supplier(s) will be enough for use. Guidance of digital process technology will, however, enable more effective operation as well as provide effectiveness in maintenance aspect including troubleshooting.
Central sterilization Department (CSD) System	This project calls for the sterilization department currently managed in the operation department to be strengthened to reorganize it as the central sterilization department. The target hospital, however, does not have enough operational experience for centralization. It is anticipated that technical guidance with soft component will improve the central sterilization department in terms of operation system and maintenance technique.
Training of clinical techniques (Obstetrics/ Gynecology (OB/GY) and Orthopedics departments)	Medical personnel in the target hospital, with enough education taken through training processes as well as experience of basic use of equipment procured in this project, are anticipated to obtain capacity to effectively and efficiently operate equipment to be installed in this project by reeducation of clinical knowledge, which will lead to increased effectiveness of the project. Especially medical personnel involved with the departments with extremely high priority, that is OB/GY, and orthopedic departments, will receive technical guidance with the purpose of reeducation of clinical techniques.

(1) Contents of the soft component

- 1) Training for effective operation and management technique of the CR system
 - maintenance technics for CR system
 - handling of digital X-ray image data
 - image processing of digital X-ray image data
- 2) Training for CSD system for execution of adequate sterilization management
 - Assistance to build the foundation of Centralization system of sterilization



- handling materials for sterilization
 - maintenance technics for autoclave
- 3) Refresh Training for providing high-quality clinical services
- emergency services/operation in OB/GY department
 - emergency services/operation in Orthopedic department
- (2) Target person and number of training
- 1) CR system: several persons of X-ray doctor, X-ray technician, doctors in charge of Clinical services
 - 2) CSD system : several persons of Nurse and related staff in the sterilization department
 - 3) Refresh Training for emergency services/operation
 - Doctors of OB/GY : 2 persons
 - Doctors of Orthopedic Surgery : 2 person
 - Nurses and other paramedical Staff of relational department : 2 persons
- (3) Trainer
- 1) CR system : Japanese Engineer
 - 2) CSD system : Japanese Engineer
 - 3) Refresh training : Specialists from each department in central level hospital
- (4) Place of Training
- CR system/CSD system : at Svay Rieng hospital
 - Refresh training : Central level hospital

Annex-7 Equipment requires 3 Year Maintenance Service

Table-6 List of Equipment Requires 3 Year Maintenance Service

No.	Code No.	Equipment Name	Quantity		Periodic Inspection (times per year)	On Call Service (times per year)
			Q'ty	Unit		
1	1	Anesthesia Machine	3	Units	2	3
2	5	Automatic Hematology Analyzer	1	Unit	4	3
3	9	C-arm X-ray Unit	1	Units	2	4
4	12	Coagulation Analyzer	1	Unit	4	3
5	15	CR System	1	Set	1	3
6	16	Defibrillator	1	Unit	2	3
7	19	Dental Chair Unit	1	Set	1	3
8	30	ECG Unit	2	Sets	1	2
9	31	Electro Surgical Unit	2	Sets	0	2
10	32	Electrolyte Analyzer	1	Unit	3	3
11	55	Infant Incubator	2	Unit	1	3
12	56	Infusion Pump	6	Units	1	4
13	66	Operating Table	3	Sets	2	3
14	69	Patient Monitor	14	Units	2	3
15	77	Spectrophotometer	1	Unit	2	3
16	79	Sterilizer System for CSD	1	Set	1	3
17	84	Syringe Pump	2	Units	1	4
18	93	Ventilator	4	Units	2	3

5. Soft Component (Technical Assistance) Plan

PREPARATORY SURVEY
ON
THE PROJECT FOR IMPROVEMENT OF SVAY
RIENG PROVINCIAL REFERRAL HOSPITAL
IN
THE KINGDOM OF CAMBODIA

Plan of Technical Assistance (Soft Component)

October 2014

Consortium of
Azusa Sekkei Co., Ltd.
and INTEM Consulting, Inc.

Contents

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2. Objective of Soft Component	5
3. Output of Soft Component.....	5
4. Method for Confirming the Degrees of Achievement of Outputs.....	6
5. Activities of Soft Component (Input Plan).....	7
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7. Implementing Schedule of Soft Component.....	12
8. Deliverable of Soft Component	12
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1. Background of Soft Component

The Project for Improvement of Svay Rieng Provincial Referral Hospital (hereinafter referred to as the Project) in the Kingdom of Cambodia (hereinafter referred to as Cambodia) involves constructing some facilities and upgrading equipment to improve the current situation of the Svay Rieng Provincial Referral Hospital, the top-referral hospital in Svay Rieng Province in Cambodia, where, due to aging and lack of facilities and equipment, adequate medical service cannot be provided.

Facility construction and equipment improvement will be conducted in the Clinical Division, including the Operation Department, the Radiologic Image Diagnosis Division, the Central Sterilization Department, etc. For items urgently requiring improvement, equipment of the Clinical Laboratory, ENT (Ear, Nose and Throat) Department and the Dental Department will also be improved, where facility development will not be conducted.

The equipment plan of the Project is based on the “Medical Equipment Standard List for Referral Hospital CPA3”¹ (“Standard Equipment List” for hospitals at CPA3 level²), as defined by the Ministry of Health (hereinafter referred to as MOH). It covers highly relevant equipment from various perspectives such as the need for and sustainability of the operation and basically has no issues in terms of the operation and maintenance of the equipment to be procured.

However, the equipment list includes some items that will be introduced to the Svay Rieng Provincial Referral Hospital for the first time although the staff members have some experience in using them, and some of the target equipment of the Project require the operational systems to be improved. For such items, the introduction of the following components will facilitate more effective utilization.

1-1. Technical Training in the Computed Radiography (CR) System - Assistance to Improve the Operational System and Training in Operation and Maintenance Techniques -

Concerning the general X-ray equipment included in the requested equipment list, the recipient has requested a digital type. After we considered the appropriateness of the request, we decided to adopt a digital CR system, because digital equipment does not produce waste liquids such as developing solution and therefore has the advantage of reducing environmental burdens. Moreover, the local agent has well-established after-sales service and procuring the necessary consumables for digital X-ray equipment, which is already widely used in Cambodia, is not a problem. Additionally, it was also confirmed that the equipment does not require any particularly difficult operations and existing staff members can tackle the system with the current level of techniques. The CR system is basically a combination of a reader used to digitize X-ray images and computers. Operating instructions provided by an engineer from the manufacturer or procurement agency at the time of installation will suffice for the operation of this very user-friendly system.

However, a new operational system will have to be established because, unlike the traditional system where image information is distributed as X-ray films, the image information collected as digital data stored in the X-ray room will be shared by all clinical departments through LAN and more effective image information can be obtained by digitally processing the original image data. For these reasons, it is expected that the equipment will be effectively utilized through soft components such as the hospital-wide establishment of operation procedures

¹ “Medical Equipment Standard List for Referral Hospital CPA3” 1st edition (January 2004)

² 3rd leveled hospital among the 1st, 2nd, 3rd leveled hospitals targeted by the guideline, Complementary Package of Activities (CPA)

and an operation structure for digital image information and training in digital processing techniques, in addition to operation training provided by the agency, through which sufficient skills for operation procedures and daily inspection and maintenance of the procured equipment will be transferred. It is also expected that, as well as establishing such operational system, re-education on troubleshooting and daily inspection and maintenance, citing examples of issues occurring during actual operation, will ensure that the system will display sufficient capabilities after delivery and be utilized over an extended period.

It is noted that, according to the interview to the manufacturer, the manufacturer or the vendor can provide the technical support only on the products they provide, and they cannot be responsible for the support on whole system operation including LAN. Therefore, the above technical assistance cannot be included in the operational training during the installation of the equipment and it is necessary to be included in this Soft Component.

1-2. Technical Training in the Central Sterilization Department (CSD) – Support to Establish Operational System and Technical Guidance for the Operation and Maintenance Techniques -

Currently in Svay Rieng Provincial Referral Hospital, each division has a compact sterilizer to sterilize medical apparatus. The Cambodian side requested for introducing centralized sterilization system (CSD system). The CSD system is popular in advanced countries in view of the efficient use of human resources and quality assurance of the sterilization under specialized staff. In Cambodia as well, the revised CPA guideline states the centralization of sterilization department. Under these circumstances, we decided to include a large high-pressure steam sterilizer in the plan. The current Sterilization Department, attached to the Operation Department, has wide experience of using a high-pressure steam sterilizer and does not require training in basic instructions for use. However, as the concept of central control by CSD has not been firmly established hospital-wide, the state of CSD to improve the hospital system must be clarified when implementing the Project to operate the equipment optimally. It is necessary to carry out the training of the whole CSD system operation, which cannot be covered only by the operation training of the equipment under supplier.

In addition to the operation training works to be carried out by the equipment supplier such as operation guidance and daily maintenance of the procured equipment itself, it is expected that the hospital will be able to operate the equipment more effectively and adequately through the establishment and operation training of CSD under soft component.

1-3. Training in Clinical Techniques (Emergency Operation; Fields of Obstetrics and Gynecology (OB/GY), Abdominal Surgery and Orthopedic Surgery)

The healthcare professionals of the hospital received adequate training at school and have basic experience through clinical training in using the equipment to be provided by the Project. However, they cannot have enough experience on equipment which has been never introduced to the hospital after their arriving at the hospital.

Therefore, it is expected that reinforcing training that focus on the equipment which has never been introduced to healthcare workers who will operate the target equipment will help the effective and efficient use of the procured equipment under the Project, and it is very much effective for the hospital to recover the functions expected.

Under this particular Project, holding the improvement of OB/GY Department as one of the important project goal, it is planned to procure a large number of equipment for the above department. Likewise, the Project plans to

install the new C-arm X-ray Unit which is effective for fracture operation, assuming the increase of traffic accident through the increase of traffic after the completion of the Neak Loeung Bridge under Japan's Grant Aid assistance. Under these circumstances, to carry out the training of clinical techniques of OB/GY, Orthopedics and related para-medical departments together with the implementation of the Project will improve the hospital function and adequate use of the procured equipment.

2. Objective of Soft Component

2-1. Objective of Soft Component

In addition to the output of soft component, the objective to be achieved through continuous activities of the implementing agencies of the recipient country is as stated below. (To be achieved in three years)

”The service system will be improved to serve as a top referral hospital in the province”

3. Output of Soft Component

The outputs to be achieved at the completion of the soft components are as follows:

I. Technical Training in the CR System

The following will be achieved by discussing with the administrative department and the departments involved with the CR system and by providing technical training to X-ray technicians, medical doctors and MEM-WG³ of the clinical departments.

I-① Basic knowledge of the procured equipment will be acquired and an adequate operational system for the CR system will be established.

I-② The quality of the X-ray diagnostic images will be improved if the image processing techniques are learned.

I-③ Skills for daily checkup and maintenance will be acquired.

II. Technical Training in CSD

The following will be achieved by discussing with administrative departments, those related to CSD and providing technical training to healthcare professionals related to CSD and MEM-WG⁴ at the target hospital:

II-① A CSD operational system will be established.

II-② Operation and maintenance techniques for the procured equipment will be improved.

III. Training in Clinical Techniques (Emergency Operation; the fields of OB/GY and Orthopedic Surgery)

The following will be achieved by providing refresher training in clinical technique to relevant staff in the fields of Emergency Operation.

III-① The knowledge and skills in Emergency Operation (Fields of OB/GY and Orthopedic Surgery) will be consolidated at the target hospital

³ The Working Group that is in charge of Medical Equipment Maintenance and Management: MEM-WG)

⁴

4. Method for Confirming the Degrees of Achievement of Outputs

Achievement of the soft components will be confirmed as follows:

Method of Confirming Achievements

	Output	Method of Confirming Achievements
I Technical Training for the CR System	① Basic knowledge of the procured equipment will be understood and the operational system for the CR system will be established.	Documents such as an operational system chart and operation manual will be created. The server access status in each department will be checked.
	② Accurate X-ray diagnostic images will be available through image processing.	Skills will be evaluated before and after technical training is provided and the level of understanding will be checked.
	③ Methods of daily and periodical maintenance of the procured equipment is acquired and skills for fault diagnosis and troubleshooting are improved.	Manuals for the procured equipment will be added to the existing maintenance system. Skills will be evaluated before and after the technical training is implemented to check the level of understanding.
II Technical Training in CSD	① The CSD operational system will be established.	Opinions of hospital workers will be collected and documents such as an operational system chart and operation manual will be created. Establishment of the flow of sterilization materials will be confirmed (by checking actual condition, questionnaire, etc.).
	② Operation and maintenance techniques for the procured equipment will be improved.	Manuals for the procured equipment will be added to the existing maintenance system. Skills will be evaluated before and after the technical training is implemented to check the level of understanding.
III Training in Clinical Techniques (Fields of OB/GY and Orthopedic Surgery)	Experience in Emergency Operation will be accumulated in the target fields and clinical technique will be improved.	The actual number of Emergency Operation cases that the participants attend during the clinical training will be checked.

5. Activities of Soft Component (Input Plan)

Activities to achieve each output (Input Plan) are as follows:

(1) Lecturers

- Consultant for the CR system technical training(Japanese): 1 person
- Consultant for the CSD technical training(Japanese): 1 person
- Consultant for training in Clinical Techniques (Japanese medical doctor): 1 person
- Consultant for training in Clinical Techniques for OB/GY (Cambodian medical doctor):3 person
- Consultant for training in Clinical Techniques for the Orthopedic Surgery
(Cambodian medical doctor): 2 persons
- Consultant for training in Clinical Techniques for paramedical
(Cambodian medical doctor): 8 persons
- Consultant for technical training planning 1 (Japanese)*¹: 1 person
- Consultant for technical training planning 2 (Cambodian) *²: 1 person

*¹ As providing the training efficiently will require elaborate preparations such as development of a technical training plan, meetings with MOH, the target hospital, other related organizations etc., arrangement of venues, arrangement of transportation and scheduling, a Consultant for “Technical Training Planning (Japanese and Cambodian)” who has basic medical knowledge to has smooth meeting with related organizations shall be assigned to conduct such operations.

*² As providing the training efficiency will need enough preparation such as arrangement of venues, etc. Therefore, Cambodian consultant for “Technical Training Planning” who know well about local situation shall be assigned to support the above Japanese consultant for “Technical Training Planning”.

(2) Plan of Operation

The details of the operations (① Preparation in Japan, ② Discussion in Cambodia, ③ Training in Cambodia and ④ Work in Japan) are as follows:

① Preparation in Japan

Create the draft materials necessary for each technical guidance. The number of days required for this preparatory work in Japan shall be 5 days for Consultant for training in Clinical Techniques (Japanese medical doctor), 3 days for Consultant for the CR system technical training (Japanese), 3 days for Consultant for CSD technical training (Japanese) and 10 days for a Consultant for technical training planning 1 respectively.

② Discussion in Cambodia

To provide training efficiently and maintain its effect, it is crucial to engage in multiple discussions with MOH, the Svay Rieng Provincial Referral Hospital and other relevant parties for joint development of training materials and joint provision of training. We must also consider the time required for translation because the training materials will have to be translated into Khmer. Therefore, a total of 2 persons, 1 Consultant for training in Clinical Techniques (Japanese medical doctor) and 1 Consultant for Technical training planning (Japanese) 1, shall be dispatched to Cambodia to meet with MOH, the Svay Rieng Provincial Referral Hospital, Provincial Health Department and the Cambodian lecturers before providing the technical guidance. The venue will be the MOH office, located in Phnom Penh and the Svay Rieng Provincial Referral Hospital. The period will be a total of 8 days (4 days for travel, 4 for discussion) for the Consultant for training in Clinical Techniques (Japanese medical doctor) and 10 days (4 days for travel, 6 for discussion) for Consultant for technical training planning 1 (Japanese), as he/she will continuously discuss Technical Training for the CR System and Technical Training for CSD system.

③ Training in Cambodia

Plan of Operation

Output		Plan of Operation		
		Lecturer	Outline of Training	Trainee
I Technical Training for the CR System	① The basic knowledge of procured equipment will be understood and the CR system operation structure will be established.	Consultant for the CR system technical training	<ul style="list-style-type: none"> • Operation principles • Confirmation of intended uses etc. • Operation guidance of the CR system • Others 	Radiologic technicians, medical doctors conducting diagnostic readings of X-ray films, MEM-WG etc.
	② Accurate X-ray diagnostic images will be available through image processing.		<ul style="list-style-type: none"> • Image processing practice for each dept., etc. 	
	③ Methods of daily and periodical maintenance of the procured equipment is acquired and skills for fault diagnosis and troubleshooting are improved.		<ul style="list-style-type: none"> • Methods of inspecting and maintaining procured equipment • Continuous guidance of a maintenance and management plan, detection of faulty parts, how to tackle failures, troubleshooting techniques etc. 	
II Technical Training in CSD	① The CSD operation system will be improved.	Consultant for the CSD technical training	<ul style="list-style-type: none"> • Guidance to establish the CSD operational system etc. 	Healthcare professionals of CSD, MEM-WG etc.
	② Operation and management techniques for procured equipment will be improved.		<ul style="list-style-type: none"> • Technical guidance on operation using procured equipment etc. • Development of a maintenance and management plan, detection of faulty parts, how to tackle failures, troubleshooting techniques etc. 	
III Training in Clinical Techniques (Fields of OB/GY and Orthopedic Surgery)	Experience in Emergency Operations will be accumulated in the target fields and the clinical knowledge and skill regarding the procured equipment will be reinforced	Clinical Technical Consultant for the each fields	<ul style="list-style-type: none"> • Practical training in Emergency Operation at a central level hospital or else a. OB/GY. b. Orthopedic Surgery c. Paramedical 	Medical doctors, nurses, paramedical etc. in the target fields

Technical training for the CR system and Technical training in CSD shall be conducted at a meeting room of the Svay Rieng Provincial Referral Hospital and at the equipment locations. Practical training will be provided using the procured equipment immediately after the equipment has been procured with a grant aid. The trainees shall include radiologic technicians, medical doctors conducting diagnostic readings of X-ray films, and medical equipment maintenance technicians in charge of maintaining and managing the equipment. Trainees of the technical training for the CR system shall be radiology technicians and those who read X-ray films such as medical doctors and MEM-WG members. The number of trainees is expected to be around 15, including 2-3 staff members of the radiology department, staff members of the departments where the CR system clients will be installed (2-3 members from each of the department of obstetrics and gynecology, the pediatric department and the department of surgery) and 2-3 members of the MEM-WG. Trainees of the technical training in CSD shall be 2-3 healthcare professionals of the CSD department and 2-3 members of the MEM-WG, a total of around 5. The consultant for technical training planning shall be a Cambodian sent from Phnom Penh.

Regarding “Clinical Technique Training (Emergency Operation, OB/GY and Orthopedic Surgery)”, there are plans to have trainees participate in the clinical service, such as actual operations at a central level hospital, to gain experience. The detailed content, such as targeted persons, duration and so on is shown on the following chart. However, the actual content and schedule will be fixed at the time of implementation. It is expected to be difficult to coordinate the schedule of the lecturers of all areas and hold all training courses consecutively. The number of days of training should be finalized according to the result of the first dispatch, “prior consultation, and joint development of curricula and training materials”.

The consultant for technical training planning will travel to Cambodia for each training course, because it is expected to be difficult to coordinate the schedule of the lecturers in all areas and hold all training courses consecutively.

The basic plan is to allocate a Consultant for technical training planning 2 (Cambodian) to each training management session.

The detail of the training course is assumed as follows:

- OB/GY : Doctors and nurses of the training course will engage in clinical activities at hospitals in central level as a staff, following the instruction of the medical advisor. Through the training, the skills for emergency cases and OB/GY operation, such as the methods of triage, diagnosis and treatment of OB/GY emergency patients and switching from normal delivery to caesarian section in abnormal cases will be enhanced. Regarding the relationship with the equipment which will be procured under the Project, the Training will enable improvement technique such as diagnostic technique with ultrasound machine, efficient use of caesarian section set, reconfirmation of purpose of use of patient monitor for patient who is seriously ill and clinical technique on decision of treatment with earning biological information.
- Orthopedics: Same as above, doctors and nurses will engage in clinical activities at hospitals in central level as a staff, following the instruction of the medical advisor. Through the training, the skills for triage, diagnosis and treatment of Orthopedics emergency patients and skills operations will be enhanced. Especially, it is important to improve the skills to traffic injury patients considering the increase of those patients at Svay Rieng Provincial Referral Hospital. As the C-arm X-ray Unit which is highly effective against the fracture operation and accessories at orthopedics operation table will be equipped at the Svay Rieng Provincial Referral Hospital for the first time under the Project, it is particularly important to improve the skills using these equipment.

Targeted person, duration and number of trainees

Training in Clinical Technique	Duration	Number of Trainees	Number of Trainers
CR system	6 days	approx. 15	1 (Japanese)
CSD system	6 days	approx. 5	2 (Japanese)
Obstetrics/Gynecology	2 months	2	3 (Cambodian)
Orthopedics	2 months	2	2 (Cambodian)
Para-medical	15 days	2	8 (Cambodian)

The expected period of dispatch for each training session is as below.

I. Technical training for the CR system

- Consultant for the CR system technical training 1 person
A total of 10 days (4 for travel and 6 for training)
- Consultant for technical training planning 2 (Cambodian) 1 person
A total of 8 days (2 for travel and 6 for training)

II. Technical training for the CSD system

- Consultant for the CSD technical training 1 person
A total of 10 days (4 for travel and 6 for training)
- Consultant for technical training planning 2 (Cambodian) 1 person
A total of 8 days (2 for travel and 6 for training)

III. Clinical Technique Training (at Central leveled hospital, etc)

Pre-training discussion

- Consultant for training in Clinical Techniques (Japanese medical doctor) 1 person
A total of 8 days (3 for travel and 5 days of discussion in Phnom Penh)
- Consultant for technical training planning 1 (Japanese) 1 person
A total of 10 days (3 for travel and 7 days of discussion in Phnom Penh)

Clinical Technique Training

a. OBGY

- Consultant for training in Clinical Techniques for OBGY (Cambodian) 3 persons
A total of 150 days (2 persons x 2 months (25 days/month) x 1 courses)
- Consultant for technical training planning 2 (Cambodian) 1 person
A total of 20 days

b. Orthopedic Surgery

- Consultant for training in Clinical Techniques for the Orthopedic Surgery 2 persons
A total of 200 days (2 persons x 2 months (25 days/month) x 2 courses)
- Consultant for technical training planning 2 (Cambodian) 1 person
A total of 40 days

- e. Paramedical
 - Consultant for training in paramedical (Cambodian nurse, etc.) 8 persons
A total of 120 days (15 days x 8 courses)
 - Consultant for technical training planning 2 (Cambodian) 1 persons
A total of 120 days (1 person)

Final report in Cambodia

- Consultant for technical training planning 1 (Japanese) 1 person
A total of 7 days (3 for travel and 4 days for final report)

As a basic rule, the Consultant for Technical Training Planning 2 (Cambodian) shall be used to implement the training. However, as final coordination with hospitals that will accept trainees, the Ministry of Health, Svay Rieng Provincial Referral Hospital, etc. will be required for training in clinical techniques, a Consultant for Technical Training Planning 1 (Japanese) shall be dispatched immediately before the training is implemented to carry out coordination to ensure training is conducted properly at each hospital and achievement of the planned output is ensured. As the training in clinical techniques is expected to be provided in Khmer, the Consultant for Technical Training Planning 2 (Cambodian) shall normally attend the trainees and Technical Training Planning 1 (Japanese) shall return to Japan as soon as the coordination is completed. As a completion report to the Ministry of Health has to be made when training is completed, Technical Training Planning 1 (Japanese) shall be dispatched again, immediately prior to the completion of the technical training, to collect reporting materials from the technical training instructors and compile the completion report.

④ Work in Japan:

Summarize the results of technical training etc., and the Interim Report, Implementation Report and Completion Report created. The number of days required for the work in Japan shall be 3 for one Japanese consultant engaged in technical training planning.

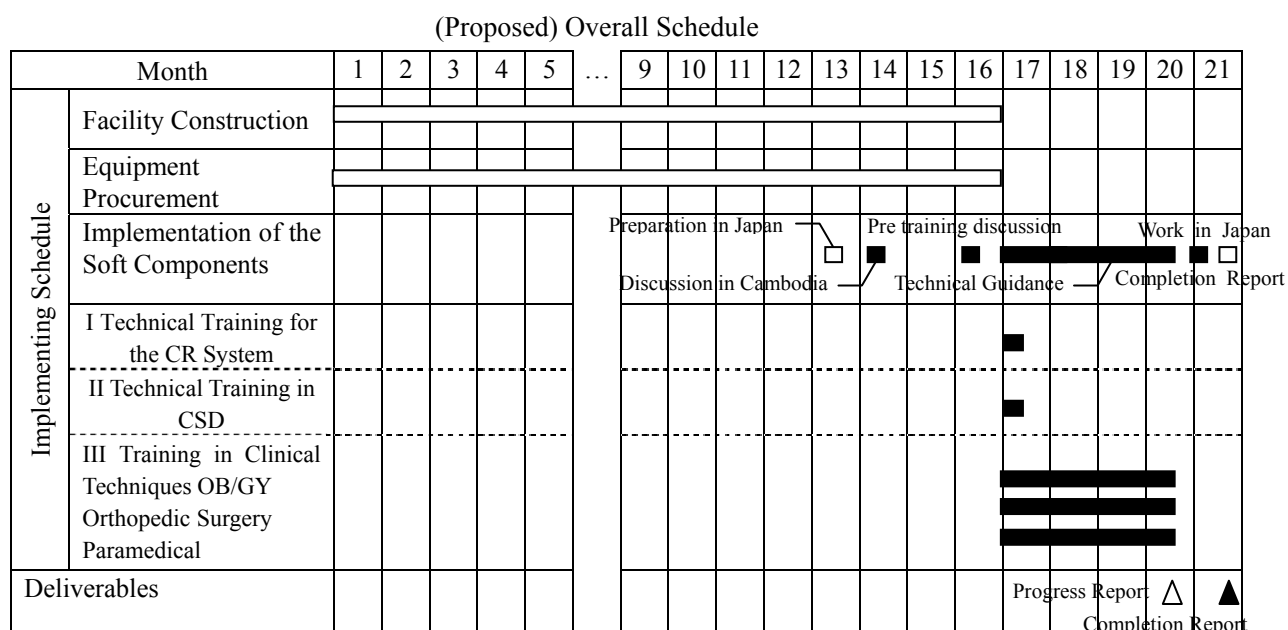
6. Method for Procuring Implementation Resources of Soft Component

To implement the soft component, Japanese consultants with specific professional knowledge of the equipment procured in the Project shall oversee “CR System Technical Training” and “CSD Technical Training”.

Regarding the “Training in Clinical Techniques”, as the training will be provided at central leveled hospitals etc., we have agreed with the Ministry of Health of Cambodia that the training will be provided by Cambodian medical doctors, nurses, etc. with sufficient experience in emergency operations, etc., and sufficient technical capabilities to provide training while the consultant for training in Clinical Techniques (Japanese medical doctor) will oversee development of the training implementation plan, discussion with local organizations, curriculum development, etc.

7. Implementing Schedule of Soft Component

The (proposed) implementing schedule at this stage is as follows. The final implementing schedule will be determined after considering the schedule of the Cambodian side and each consultant for technical training.



8. Deliverable of Soft Component

Other than the completion report to the client and the Japanese side, the following documents will be deliverables of the soft components:

Training Contents		Outcomes
I Technical Training for the CR System	① Confirmation of basic knowledge of the CR system and support for establishing an operational system	Implementation Report of the Training in Techniques <ul style="list-style-type: none"> • Teaching materials • Operation manual • Instructor's report • Result of questionnaire conducted on participants, etc.
	② Training in image processing techniques	
	③ Training in techniques for daily and periodical maintenance of the procured equipment	
II Technical Training in CSD	① Support to develop an operational system for CSD	<ul style="list-style-type: none"> • Result of questionnaire conducted on participants, etc.
	② Training in techniques to operate and manage the procured equipment	
III Training in Clinical Techniques	Practical training in emergency operations in target fields a. Department of obstetrics and gynecology b. Department of orthopedic surgery c. Paramedical	Report on Training in Clinical Techniques <ul style="list-style-type: none"> • Teaching materials • Operation record • Instructor's report • Result of questionnaire conducted on participants, etc.

9. Responsibility of the Implementing Agencies of the Recipient Country

Those involved in this plan in MOH, the Svay Rieng Provincial Referral Hospital and the provincial health department must select consultants for technical training (Cambodian medical doctors) and trainees and ensure they participate in the technical training, as well as coordinating the schedule of the technical training and providing the receiving hospital. Those in charge of the national workshop team, which is responsible for maintaining and managing medical equipment in MOH, must also encourage participation in the training and strive to develop an operational system based on the acquired techniques, continue to provide similar training and retain the effect and improve techniques so that the procured equipment will be properly operated for an extended period.

6. Other Relevant Data

Project Title: The Project for Improvement of Svay Rieng Provincial Referral Hospital in the Kingdom of Cambodia

No.	Title	Issuing Institution	Issued Year
1	CPA Guideline 2014 (in Khmer)	Ministry of Health	2014
2	National Strategic Plan for the Prevention and Control of Noncommunicable Diseases 2013-2020	Ministry of Health	2013
3	Health Sector Progress in 2013	Ministry of Health	2014
4	Annual Health Financing Report 2013	Ministry of Health	2014
5	Annual Health Statistics 2013	Ministry of Health	2013
6	Annual Health Report 2012	Svay Rieng Provincial Health Department	2012
7	Annual Health Report 2013	Svay Rieng Provincial Health Department	2013
8	Law on Fire Prevention and Fire Fighting 2013 (in Khmer)	Svay Rieng Provincial Police Department	2013
9	Drinking Water Quality Standards	Ministry of Mine, Industry and Energy	2004
10	Daily Water Quality Test Result of Svay Rieng City Water of 2013	Svay Rieng Provincial Water Supply Department	2013
11	Road Map of Svay Rieng (scale 1:110,000)		2012
12	Road Safety in Svay Rieng Province	Svay Rieng Provincial Health Department	2014
13	Outline of Bavet SEZ (in Japanese)	The Council for the Development of Cambodia	2014
14	3 Considerations in Investment Climate in Cambodia (in Japanese)	The Council for the Development of Cambodia	2014

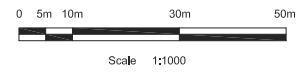
7. References

7-1. Topographic Map of the Site

PROJECT:
TOPOGRAPHIC SURVEY
SVAY RIENG PROVINCIAL HOSPITAL

LEGEND

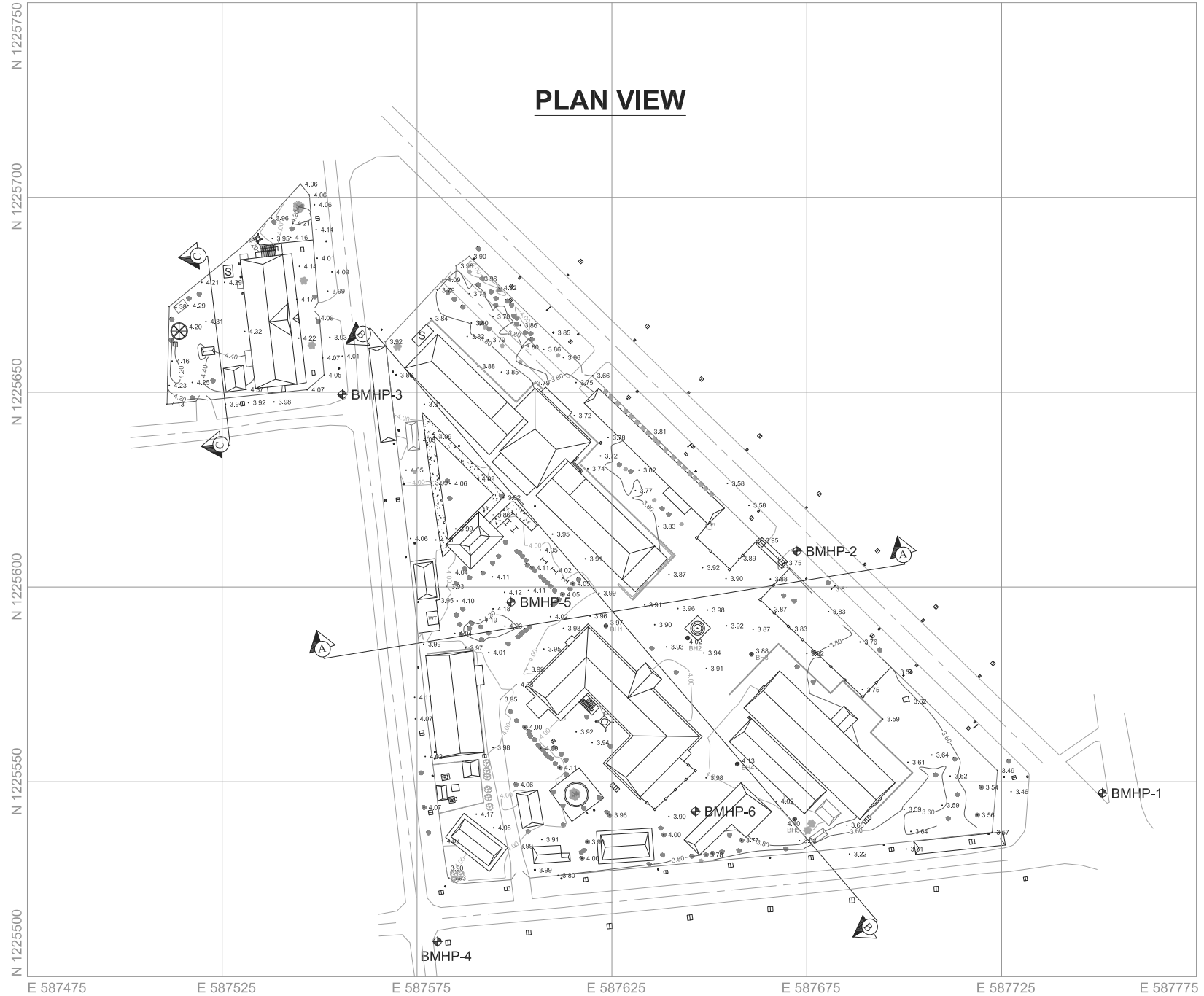
- 1-Land Boundary1
- 2-Land Boundary2
- 3-BM
- 4-Drain
- 5-Road
- 6-Building
- 7-Main Hole
- 8-Electric Pole
- 9-Roadside Lamp
- 10-Tree
- 11-Monument
- 12-Entrance
- 13-Swing
- 14-Spot Elevation
- 15-Bore Hole (BH)
- 16-Minor Contour
- 17-Major Contour
- 18-Septic Tank
- 19-WC
- 20-Motor & Car Parking
- 21-Water Tank
- 22-Cottage
- 23-Fence



Land Boundary 1 Area = 14,146.00 m² = 1.41 ha
Land Boundary 2 Area = 1,494.00 m² = 0.15 ha

DRAWING BY:	MUY CHAMROEUN
CHECKED BY:	SOPHAK LY
APPROVED BY:	
DATE:	26 Sep 2014
SCALE:	1:1000
DRAWING TITLE:	Plan View
SHEET NO.:	1
SIZE:	A3

PLAN VIEW



A-57

7-2. Boring Data of the Site

(1) Bore Hole Point BH-1

**Preparatory Survey on the Project for Improvement
of
Svay Rieng Province Referral Hospital in Kingdom of Cambodia**

BORING LOG																			
Elvation		3.97m					Boring No.		BH-1										
Location/station		Svay Reang Hospital					Starting Day		1-Sep-14										
Water Inflow		5.00-5.60m					Finishing Day		1-Sep-14										
Water Level		1.00-1.10m					Incharge by												
Elevation (m)	Depth (m)	Thickness of Layer	Graph Log	Soil Classification	Tone of Color	Characteristic	Sample No. TW Sampler	Sample No. Split Sampler	Standard Penetration Test										
									Depth (m)	Blows/Layer			Blows/30cm	N Value					
								15cm		15-30cm	30-45cm	30cm		10	20	30	40	50	60
EL +4.000	0.00-1.00	1.80m		Lean Clay with Sand	Gray	From top to the depth 1.8 It contain Fine Sand around 21% and a little bit of Gravel. Soft			0										
	1.00-1.45						D1		1	1	2	3							
	2.00-2.45			Lean Clay		The percentage of Fine Sand decrease to around 12% to 13%. Medium to Stiff	D2		2	3	5	8							
	3.00-3.45				Turn to yellow		D3		3	4	6	10							
EL ±0.000	4.00-4.45	2.20m		Lean Clay with Sand		The percentage of Fine Sand Increase again to around 21%. Very Stiff	D4		4	6	9	15							
	5.00-5.45	1.50m					D5		5	7	12	19							
	6.00-6.45			Lean Clay	Turn to Reddish Brown	The Percentage of Fine Sand become decrease to around 10%. Very Stiff	D6		5	8	13	21							
	7.00-7.45						D7		7	9	11	20							
	8.00-8.45						D8		7	10	13	23							
EL -5.000	9.00-9.45	0.50m		Lean Clay with Gravel		This layer it found the Gravel around 16 % but fine sand still decrease. Very Stiff	D9		6	11	13	24							
	10.00-10.45			Lean Clay	Turn to yellow Gray	The Percentage of Sand still decrease to around 7% Very Stiff	D10		5	10	12	22							
	11.00-11.45	2.50m					D11		7	11	13	24							
	12.00-12.45			Organic Clay	Turn to Dark Gray	It Contain wood fragment in this layer Very Stiff to Stiff	D12		5	9	10	19							
EL -10.000	13.00-13.45	2.00m					D13		4	6	9	15							
	14.00-14.45						D14		4	7	9	16							
	15.00-15.45			Sandy Lean Clay		The wood fragment is vanished. The percentage of Fine Sand increase to about 50% to 58% Medium Dense	D15		5	7	12	19							
	16.00-16.45						D16		6	8	12	20							
	17.00-17.45	3.50m			Blackish Gray		D17		4	8	9	17							
EL -15.000	18.00-18.45			Organic Clay		the percentages of Fine Sand about 1% and again it contain the wood fragment	D18		4	4	5	9							
	19.00-19.45	more than 3.00m					D19		4	4	5	9							
	20.00-20.45						D20		4	5	6	11							

(2) Bore Hole Point BH-2

Preparatory Survey on the Project for Improvement of Svay Rieng Province Referral Hospital in Kingdom of Cambodia

BORING LOG																			
Elevation		: 4.02m				Boring No.		: BH-2											
Location/station		: Svay Reang Hospital				Starting Day		: 30-Aug-14											
Water Inflow		: 2.00-2.10m				Finishing Day		: 31-Aug-14											
Water Level		: 0.80-0.90m				Incharge by													
Elevation (m)	Depth (m)	Thinness of Layer	Graph Log	Description of Soil			Sample No. TW Sampler	Sample No. Split Sampler	Standard Penetration Test										
				Soil Classification	Tone of Color	Characteristic			Depth (m)	Blows/Layer			Blows/30cm	N Value					
										15cm	15-30cm	30-45cm		10	20	30	40	50	60
EL +4.000	1	2.00m		Lean Clay with Sand	Gray	From top to the depth 2.0 It contain Fine Sand around 18% and a little bit of Gravel. Soft			0										
	2							D1	1.00-1.45	0	1	1	2						
	3	2.00m		Lean Clay	Turn to Yellow	The percentage of Fine Sand around 10% to 14% Medium to stiff													
	4								D2	2.00-2.45	3	5	7	12					
	5						Sandy Lean Clay with Gravel	This layer it found the Gravel Around 16% and around 23% Very Stiff											
EL ±0.000	6	1.00m			Turn to Yellow														
	7								D4	4.00-4.45	4	8	9	17					
	8	4.00m		Lean Clay	Reddish Brown	The Gravel is vanished. The percentage of Fine Sand decrease to around 9%. Very Stiff to Hard													
	9								D5	5.00-5.45	5	7	9	16					
	10								D6	6.00-6.45	5	9	13	22					
	11								D7	7.00-7.45	5	9	14	23					
	12								D8	8.00-8.45	9	13	17	30					
	13								D9	9.00-9.45	6	12	8	20					
	14								D10	10.00-10.45	6	9	10	19					
	15								D11	11.00-11.45	5	8	7	15					
	16	2.50m		Organic Clay	Turn to Dark Gray	The Wood fragment cotain in this layer and the Fine Sand around 10% Medium to Stiff													
	17								D12	12.00-12.45	2	3	4	7					
	18	1.00m		Organic Clay with Sand	Turn to Yellowish Brown	The percentage of Sand increase to around 21.0% Stiff													
	19								D13	13.00-13.45	3	5	6	11					
	20								D14	14.00-14.45	4	6	7	13					
	21	2.00m		Sandy Lean Clay	Blackid Gray	The Percentage of Sand increase up to the 61% Medium Dense													
	22								D15	15.00-15.45	4	5	9	14					
	23	more than 3.50m		Organic Clay	Blackid Gray	The wood fragment agaain appaer in this layer and the Sand decrease to around 1.9% Stiff													
	24								D16	16.00-16.45	4	7	11	18					
	25								D17	17.00-17.45	4	9	5	14					
	26					D18	18.00-18.45	3	4	4	8								
	27					D19	19.00-19.45	3	4	5	9								
	28					D20	20.00-20.45	4	5	6	11								

(3) Bore Hole Point BH-3

**Preparatory Survey on the Project for Improvement
of
Svay Rieng Province Referral Hospital in Kingdom of Cambodia**

BORING LOG																							
Elevation : 3.88m					Boring No. : BH-3																		
Location/station : Svay Reang Hospital					Starting Day : 29-Aug-14																		
Water Inflow : 1.50-1.60m					Finishing Day : 30-Aug-14																		
Water Level : 1.00-1.10m					Incharge by :																		
Elevation (m)	Depth (m)	Thickness of Layer	Description of Soil				Sample No. TW Sampler	Sample No. Split Sampler	Standard Penetration Test														
			Graph Log	Soil Classification	Tone of Color	Characteristic			Depth (m)	Blows/Layer			Blows/30cm	N Value									
										15cm	15-30cm	30-45cm		10	20	30	40	50	60				
EL +4.000	1	1.60m		Lean Clay with Sand	Gray	From the top to depth 1.6m it contain Sand around 20% very soft			0.00-1.00				0										
	2	2.40m		Lean Clay	Turn to Reddish Brown	The percentage of Sand decrease to around 14% Stiff to Stiff	D1		1.00-1.45	0	0	1	1										
	3						D2		2.00-2.45	3	5	6	11										
	4						D3		3.00-3.45	4	6	8	14										
EL ±0.000	5	1.00m		Lean Clay with Sand	Turn to Yellowish	The percentage of Sand increase to around 34% Stiff			4.00-4.45	1	6	7	13										
	6	6.00m		Lean Clay	Turn to Red Brown	The percentage of sand is less than 14%. Very stiff to Very stiff	D5		5.00-5.45	5	8	8	16										
	7						D6		6.00-6.45	4	8	10	18										
	8						D7		7.00-7.45	8	11	13	24										
	9						D8		8.00-8.45	10	13	15	28										
	10						D9		9.00-9.45	5	9	12	21										
	11	3.00m		Organic Clay	Turn to Gray	The wood fragment is contain in this layer and sand contain around 9% Midium to Stiff	D10		10.00-10.45	5	9	11	20										
	12						D11		11.00-11.45	5	6	6	12										
	13						D12		12.00-12.45	2	3	3	6										
	14						D13		13.00-13.45	3	6	7	13										
EL -10.000	15	3.00m		Sandy Lean Clay		It contain the Sand around 34% to 44% . Medium Dense			14.00-14.45	4	6	8	14										
	16	more than 3.50m		Organic Clay	Turn to Brownish Dark Gray	The wood fregment again appaer in this layer and contain the Sand around 0.5% to 4.8% Stiff	D14		14.00-14.45	4	6	8	14										
	17						D15		15.00-15.45	5	7	3	10										
	18						D16		16.00-16.45	6	8	10	18										
	19						D17		17.00-17.45	5	7	8	15										
EL -15.000	20								18.00-18.45	3	4	5	9										
									19.00-19.45	3	4	5	9										
									20.00-20.45	4	5	6	11										

(4) Bore Hole Point BH-4

Preparatory Survey on the Project for Improvement of Svay Rieng Province Referral Hospital in Kingdom of Cambodia

BORING LOG																													
Elevation : 4.13m					Boring No. : BH-4																								
Location/station : Svay Reang Hospital					Starting Day : 27-Aug-14																								
Water Inflow : 2.00-2.10m					Finishing Day : 28-Aug-14																								
Water Level : 1.30-1.40m					Incharge by : SEM SAMPHORS																								
Elevation (m)	Depth (m)	Thickness of Layer	Description of Soil				Sample No. TW Sampler	Sample No. Split Sampler	Standard Penetration Test																				
			Graph Log	Soil Classification	Tone of Color	Characteristic			Depth (m)	Blows/Layer			Blows/30cm	N Value															
										15cm	15-30cm	30-45cm		10	20	30	40	50	60										
EL +4.000	0			Sandy Lean Clay	Gray	From the top to depth 1.8m It contain the sand around 33%. Soft			0.00-1.00				0																
	1	1.80m						D1	1.00-1.45	2	2	2	4																
	2								D2	2.00-2.45	4	5	8	13															
	3							D3	3.00-3.45	4	5	6	11																
EL ±0.000	4			Lean Clay	Turn to yellowish	The percentage of Sand decrease to less than 14%. Stiff to Very Stiff			D4	4.00-4.45	4	8	10	18															
	5							D5	5.00-5.45	8	9	9	18																
	6							D6	6.00-6.45	5	10	13	23																
	7							D7	7.00-7.45	7	12	15	27																
	8							D8	8.00-8.45	10	12	19	31																
EL -5.000	9							D9	9.00-9.45	5	8	9	17																
	10	8.70m						D10	10.00-10.45	5	8	9	17																
	11				Organic Clay	Turn to Gray	The wood fregment appaer in this layer and the percentage of sand is less than 5%. Stiff to Medium			D11	11.00-11.45	4	4	5	9														
	12							D12	12.00-12.45	4	5	6	11																
	13							D13	13.00-13.45	4	5	6	11																
EL -10.000	14	4.50m						D14	14.00-14.45	2	2	3	5																
	15				Lean Clay with Sand	Turn to Brownish Dark Gray	The percentage of sand increase up to 28% and also it found the Gravel less than 7.0%			D15	15.00-15.45	2	1	1	2														
	16							D16	16.00-16.45	4	6	8	14																
	17	3.00m						D17	17.00-17.45	6	8	12	20																
	18								D18	18.00-18.45	3	3	3	6															
EL -15.000	19	more than 2.50m						D19	19.00-19.45	3	4	5	9																
	20				Organic Clay		The wood fregment again appaer in this layer. Stiff			D20	20.00-20.45	4	5	6	11														

(5) Bore Hole Point BH-5

Preparatory Survey on the Project for Improvement of Svay Rieng Province Referral Hospital in Kingdom of Cambodia

BORING LOG																					
Elevation : 4.100m					Boring No. : BH-5																
Location/station : Svay Reang Hospital					Starting Day : 25-Aug-14																
Water Inflow : 1.500-1.600m					Finishing Day : 26-Aug-14																
Water Level : 1.100m					Incharge by : SEM SAMPHORS																
Elevation (m)	Depth (m)	Thickness of Layer	Description of Soil				Sample No. TW Sampler	Sample No. Split Sampler	Standard Penetration Test												
			Graph Log	Soil Classification	Tone of Color	Characteristic			Depth (m)	Blows/Layer			Blows/30cm	N Value							
										15cm	15-30cm	30-45cm		10	20	30	40	50	60		
EL +4.000	0				Gray			0.00-1.00					0								
	1				Lean Clay with Sand	It has Fine Sand about 16% to 25% from the top to the depth 4.0m Stiff		D1	1.00-1.45	2	3	5	8								
	2							D2	2.00-2.45	4	5	6	11								
	3							D3	3.00-3.45	4	5	6	11								
	4	4.00m							D4	4.00-4.45	5	8	8	16							
EL ±0.000	5	1.00m			Sandy Lean Clay	The percentage of sand increase to around 38.0% Very stiff		D5	5.00-5.45	5	8	8	16								
	6	1.00m			Lean Clay	The percentage of reduce to less than 7% Very stiff		D6	6.00-6.45	3	7	9	16								
	7	0.50m			Sandy Lean Clay	The percentage of sand increase around 52% and Gravel 11%. Medium Dense		D7	7.00-7.45	8	11	16	27								
	8				Lean Clay	The percentage of sand less than 11% Very stiff to Hard		D8	8.00-8.45	12	15	18	33								
EL -5.000	9	2.50m			Organic Clay	the wood fragment is appaer in this layer and the percentage of sand less than 6.0% Stiff		D9	9.00-9.45	5	7	9	16								
	10							D10	10.00-10.45	2	2	3	5								
	11							D11	11.00-11.45	4	5	5	10								
	12							D12	12.00-12.45	3	4	4	8								
EL -10.000	13				Lean Clay with Sand	The percentage of Sand increase up to 47%. Medium Dense		D13	13.00-13.45	2	4	4	8								
	14							D14	14.00-14.45	4	3	4	7								
	15	6.00m					Turn to Brownish Dark Gray		D15	15.00-15.45	3	5	7	12							
	16								D16	16.00-16.45	7	11	11	22							
	17				Organic Clay	The wood fragment again appaer in this layer nad percentage of Sand less than 5% Stiff to very Stiff		D17	17.00-17.45	7	10	11	21								
	18	3.00m						D18	18.00-18.45	2	3	5	8								
EL -15.000	19	1.50m						D19	19.00-19.45	3	4	5	9								
	20	more than 1.00m						D20	20.00-20.45	6	10	10	20								

7-3. Water Quality Survey Result
(1) Water tap at Building A

ព្រះរាជាណាចក្រកម្ពុជា
ជាតិ សាសនា ព្រះមហាក្សត្រ
Kingdom of Cambodia
Nation Religion King

ក្រសួងបរិស្ថាន
នាយកដ្ឋានត្រួតពិនិត្យការបំពុលបរិស្ថាន
ការិយាល័យពិសោធន៍ និង វិភាគ
Ministry of Environment
Department of Pollution Control
Laboratory Office

លេខ /N°/..... ២៤ ០១៤

ព្រឹត្តិប័ត្រលទ្ធផលវិភាគ
Analysis Report

ប្រភពសំណាក/Sample Source : Preparatory Survey on the Project for Improvement of Svay Rieng Provincial Referral Hospital.
ថ្ងៃ ខែ ឆ្នាំទទួលសំណាក/Date: September 03, 2014
ប្រភេទសំណាក/Type of Sample: Sample. No 01, Located at Building A (at Coffee Shop), Say Rieng Hospital, Svay Rieng Province.

លរ	ប៉ារ៉ាម៉ែត្រ	ខ្នាត	លទ្ធផល	ស្តង់ដារ	Method	វិធីសាស្ត្រវិភាគ
No	Parameter	Unit	Result	CNDWQS	LDL	Reference Method
1	pH	-	6,79	6.5 – 8.5	4.0	Method pH meter
2	Water Temperature	°C	28,80	NV	0.0	Method Thermometer
3	Turbidity	NTU	0.00	5.0	0.0	Digital Turbidity Meter
4	Color	mg/l Pt	0.00	5.0	0.0	Method Photometer
5	Taste	-	No Taste	Acceptable	NV	Method 2160 A
6	Odor	-	No Odor	Acceptable	NV	Method 2150 A
7	Total Dissolve Solids (TDS)	mg/l	231,00	800	NV	Method 2540 C
8	Total Hardness	mg/l	27.26	300	NV	Method Titrimetric
9	Chloride (Cl ⁻)	mg/l	17.34	250	0.1	Method 4500-Cl F
10	Chlorine (Cl ₂), Residual	mg/l	0.01	0.2 – 0.5	NV	Method Photometer
11	Ammonia (NH ₃)	mg/l	0.02	1.5	0	Method Photometer
12	Fluoride (F ⁻)	mg/l	0.29	1.5	0.1	Method 4500-F ⁻ F
13	Nitrite (NO ₂ ⁻)	mg/l	ND	3.0	0.1	Method 4500-NO2 C
14	Nitrate (NO ₃ ⁻)	mg/l	0.87	50	0.1	Method 4500-NO3 C
15	Sulphate (SO ₄ ²⁻)	mg/l	5.04	250	0.1	Method 4500-SO4 ²⁻ B
16	Cyanide (CN ⁻)	mg/l	ND	0.02	0.02	Method 4500 E
17	Aluminum (Al)	mg/l	ND	0.2	NV	Method 3500-Al C
18	Arsenic (As)	mg/l	0.004	0.05	0.0001	Method 3500-As D
19	Barium (Ba)	mg/l	0.07	0.7	0.0002	Method 3500-Ba C
20	Cadmium (Cd)	mg/l	ND	0.003	0.0002	Method 3500-Cd C
21	Chromium (Cr)	mg/L	ND	0.05	0.0005	Method 3500-Cr C
22	Copper (Cu)	mg/l	ND	1.0	0.0003	Method 3500-Cu C
23	Iron (Fe)	mg/l	0.14	0.3	NV	Method 3500-Fe C
24	Lead (Pb)	mg/l	ND	0.01	0.0002	Method 3500-Pb C
25	Manganese (Mn)	mg/l	0.06	0.3	0.0003	Method 3500-Mn C
26	Mercury (Hg)	mg/l	ND	0.001	NV	Method 3500-Hg B
27	Nickel (Ni)	mg/l	0.008	0.02	0.0004	Method 3500-Ni C
28	Selenium (Se)	mg/l	0.0006	0.01	0.0004	Method 3500-Se I
29	Sodium (Na)	mg/l	39.25	NV	NV	Method 3500-Na C
30	Zinc (Zn)	mg/l	0.03	3.0	0.0004	Method 3500-Zn C
31	Total Coliform	MPN/100ml	0	0	0	Method NF T90-413
32	E-Coli	MPN/100ml	0	0	0	Method NF T90-413

Note: 1- CNDWQS mean Cambodian National Drinking Water Quality Standard.
2- Method LDL mean Method Lowest Detection Limit, ND Mean Not Detected(Lower than LDL), NV Mean No Value.

ចេញអោយនៅ ថ្ងៃទី ០៥ ខែ សីហា ឆ្នាំ២០១៤

ប្រធានការិយាល័យ
Date of Issue:
Laboratory Chief

(Signature)
សេក ឌី

បានឃើញនៅ ថ្ងៃទី ០៥ ខែ សីហា ឆ្នាំ២០១៤
ប្រធាននាយកដ្ឋាន
Was seen on date:
Director Department

ហេង ណារ៉េន

(2) Water tap at Building C



ក្រសួងបរិស្ថាន

នាយកដ្ឋានគ្រួសារពិភពលោកបរិស្ថាន

ការិយាល័យពិសោធន៍ និង វិភាគ

Ministry of Environment

Department of Pollution Control

Laboratory Office

លេខ /N°: ២៩០៧

ព្រះរាជាណាចក្រកម្ពុជា

ជាតិ សាសនា ព្រះមហាក្សត្រ

Kingdom of Cambodia

Nation Religion King

ព្រឹត្តិប័ត្រលទ្ធផលវិភាគ

Analysis Report

ប្រភពសំណាក/Sample Source : Preparatory Survey on the Project for Improvement of Svay Rieng Provincial Referral Hospital..						
ថ្ងៃ ខែ ឆ្នាំទទួលសំណាក/Date: September 03, 2014						
ប្រភេទសំណាក/Type of Sample: Sample. No 02 Located at Building C (Hun Sen Building, អគារវះកាត់), Say Rieng Hospital, Svay Rieng Province.						
លរ	ប៉ារ៉ាម៉ែត្រ	ឌីណ	លទ្ធផល	ស្តង់ដារ	Method	វិធីសម្រួលវិភាគ
No	Parameter	Unit	Result	CNDWQS	LDL	Reference Method
1	pH	-	6.78	6.5 – 8.5	4.0	Method pH meter
2	Water Temperature	°C	28.30	NV	0.0	Method Thermometer
3	Turbidity	NTU	0.00	5.0	0.0	Digital Turbidity Meter
4	Color	mg/l Pt	0.00	5.0	0.0	Method Photometer
5	Taste	-	No Taste	Acceptable	NV	Method 2160 A
6	Odor	-	No Odor	Acceptable	NV	Method 2150 A
7	Total Dissolve Solids (TDS)	mg/l	221.00	800	NV	Method 2540 C
8	Total Hardness	mg/l	29.01	300	NV	Method Titrimetric
9	Chloride (Cl ⁻)	mg/l	19.55	250	0.1	Method 4500-Cl F
10	Chlorine (Cl ₂), Residual	mg/l	0.01	0.2 – 0.5	NV	Method Photometer
11	Ammonia (NH ₃)	mg/l	0.01	1.5	0	Method Photometer
12	Fluoride (F ⁻)	mg/l	0.31	1.5	0.1	Method 4500-F F
13	Nitrite (NO ₂ ⁻)	mg/l	ND	3.0	0.1	Method 4500-NO2 C
14	Nitrate (NO ₃ ⁻)	mg/l	0.49	50	0.1	Method 4500-NO3 C
15	Sulphate (SO ₄ ²⁻)	mg/l	5.70	250	0.1	Method 4500-SO4 ²⁻ B
16	Cyanide (CN ⁻)	mg/l	ND	0.02	0.02	Method 4500 E
17	Aluminum (Al)	mg/l	ND	0.2	NV	Method 3500-Al C
18	Arsenic (As)	mg/l	0.004	0.05	0.0001	Method 3500-As D
19	Barium (Ba)	mg/l	0.07	0.7	0.0002	Method 3500-Ba C
20	Cadmium (Cd)	mg/l	ND	0.003	0.0002	Method 3500-Cd C
21	Chromium (Cr)	mg/L	ND	0.05	0.0005	Method 3500-Cr C
22	Copper (Cu)	mg/l	0.001	1.0	0.0003	Method 3500-Cu C
23	Iron (Fe)	mg/l	0.12	0.3	NV	Method 3500-Fe C
24	Lead (Pb)	mg/l	ND	0.01	0.0002	Method 3500-Pb C
25	Manganese (Mn)	mg/l	0.07	0.3	0.0003	Method 3500-Mn C
26	Mercury (Hg)	mg/l	ND	0.001	NV	Method 3500-Hg B
27	Nickel (Ni)	mg/l	0.006	0.02	0.0004	Method 3500-Ni C
28	Selenium (Se)	mg/l	ND	0.01	0.0004	Method 3500-Se I
29	Sodium (Na)	mg/l	41.61	NV	NV	Method 3500-Na C
30	Zinc (Zn)	mg/l	0.02	3.0	0.0004	Method 3500-Zn C
31	Total Coliform	MPN/100ml	0	0	0	Method NF T90-413
32	E-Coli	MPN/100ml	0	0	0	Method NF T90-413

Note: 1- CNDWQS mean Cambodian National Drinking Water Quality Standard.
 2- Method LDL mean Method Lowest Detection Limit, ND Mean Not Detected (Lower than LDL), NV Mean No Value.

ចេញអោយនៅ ថ្ងៃទី ០៥ ខែ កញ្ញា ឆ្នាំ ២០១៤

ប្រធានការិយាល័យ
 Date of Issue:
 Laboratory Chief

សេក ឌី

បានឃើញនៅ ថ្ងៃទី ០៥ ខែ កញ្ញា ឆ្នាំ ២០១៤

ប្រធាននាយកដ្ឋាន
 Was seen on date:
 Director Department



ហេង-ណារ៉េន

